

Kinco

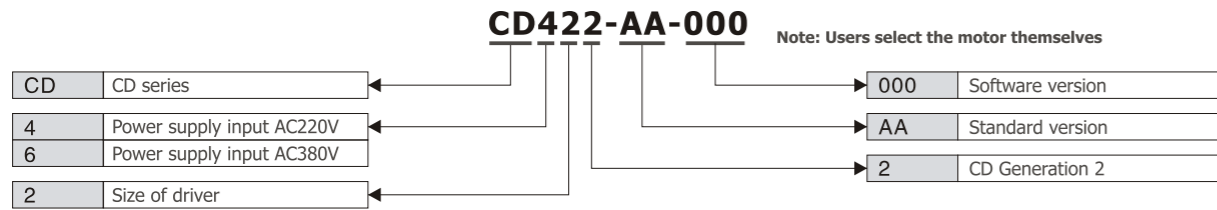
Kinco CD Series
AC Servo System



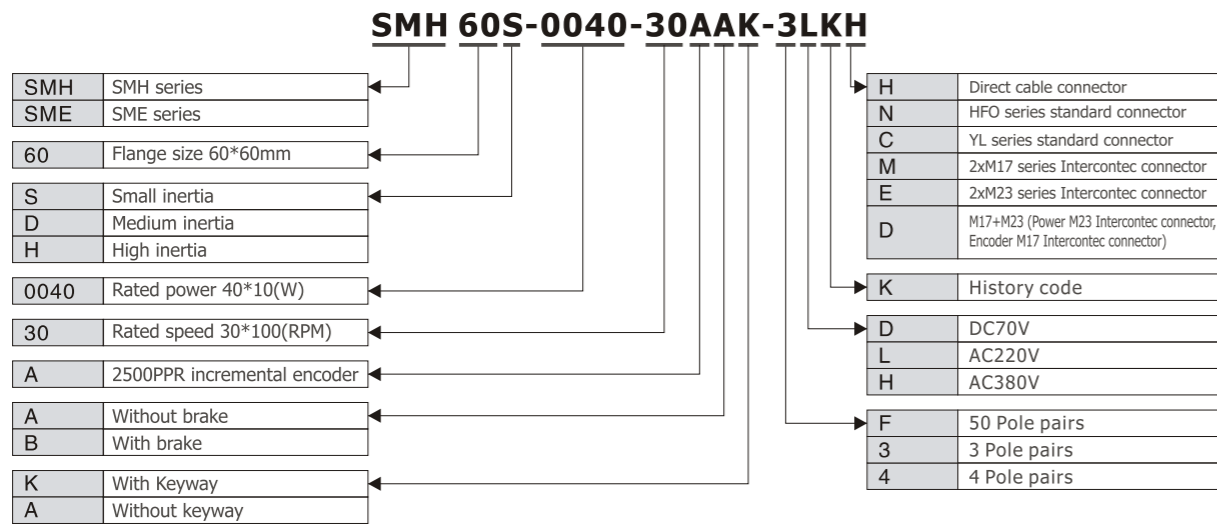
Kinco CD Series AC Servo System

Model Description of Servo Drivers and Motors

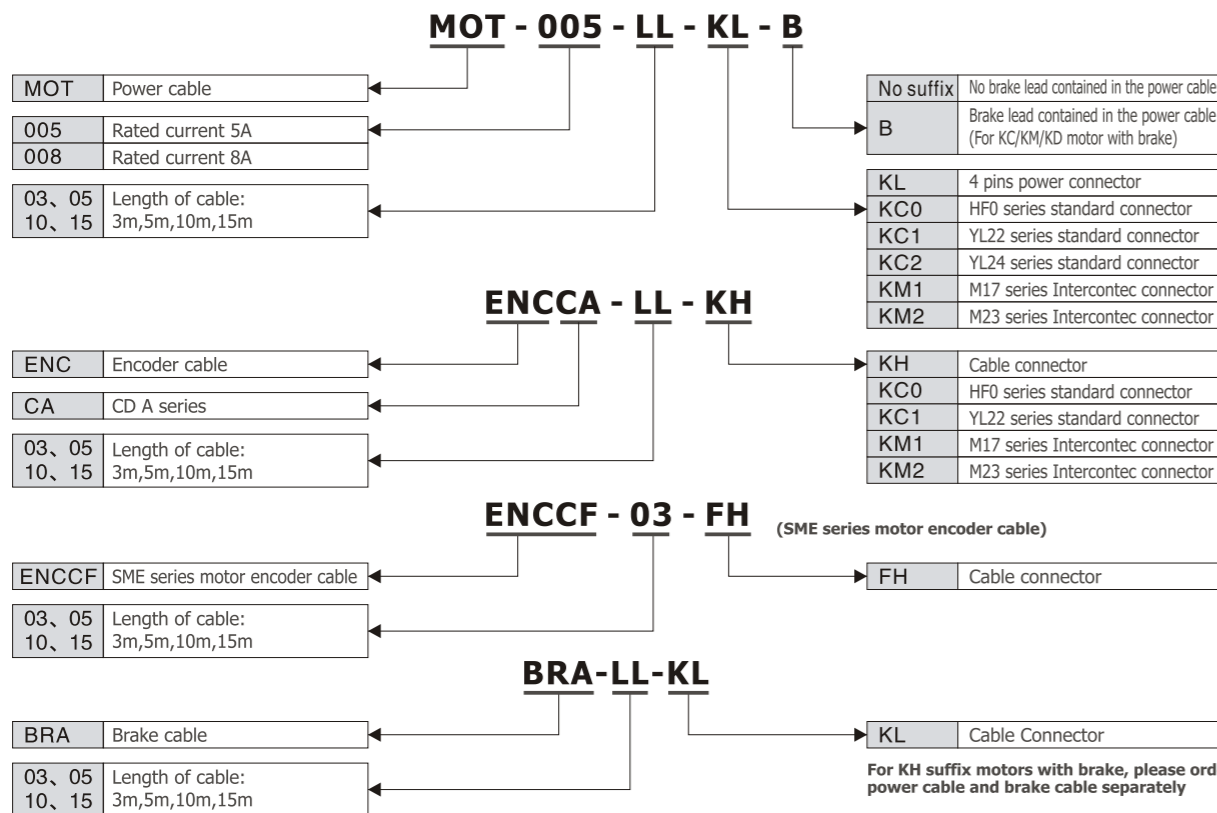
Kinco CD Series Servo Drivers



Kinco Servo Motors



Power, Brake and Encoder Cable of Motors

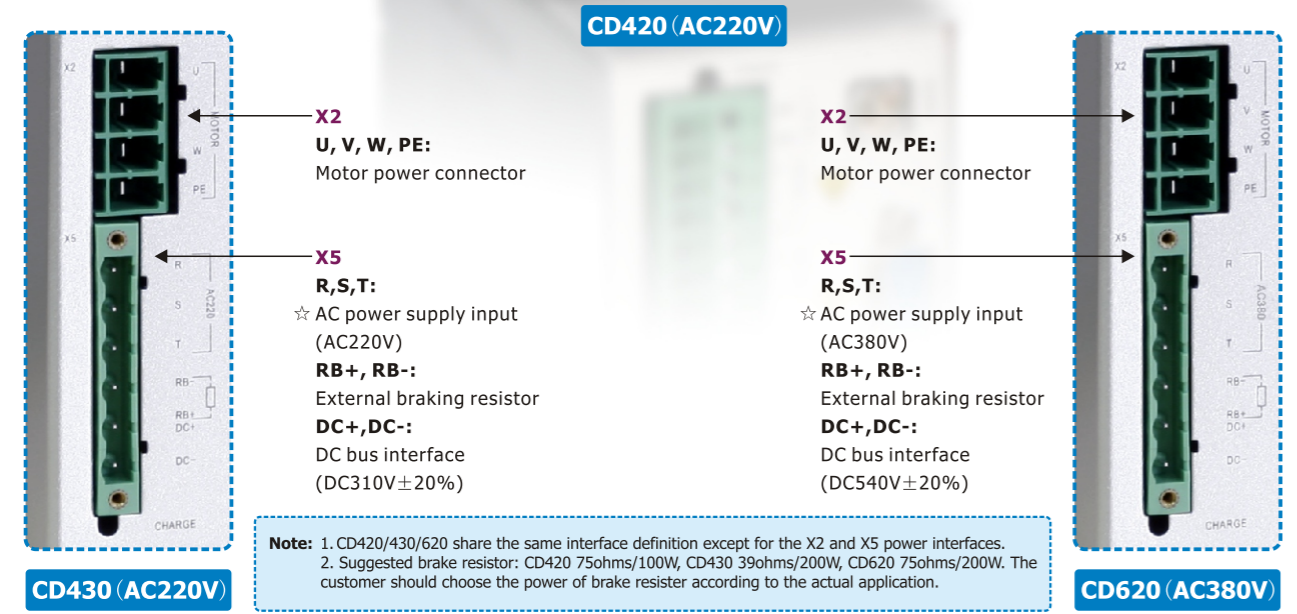
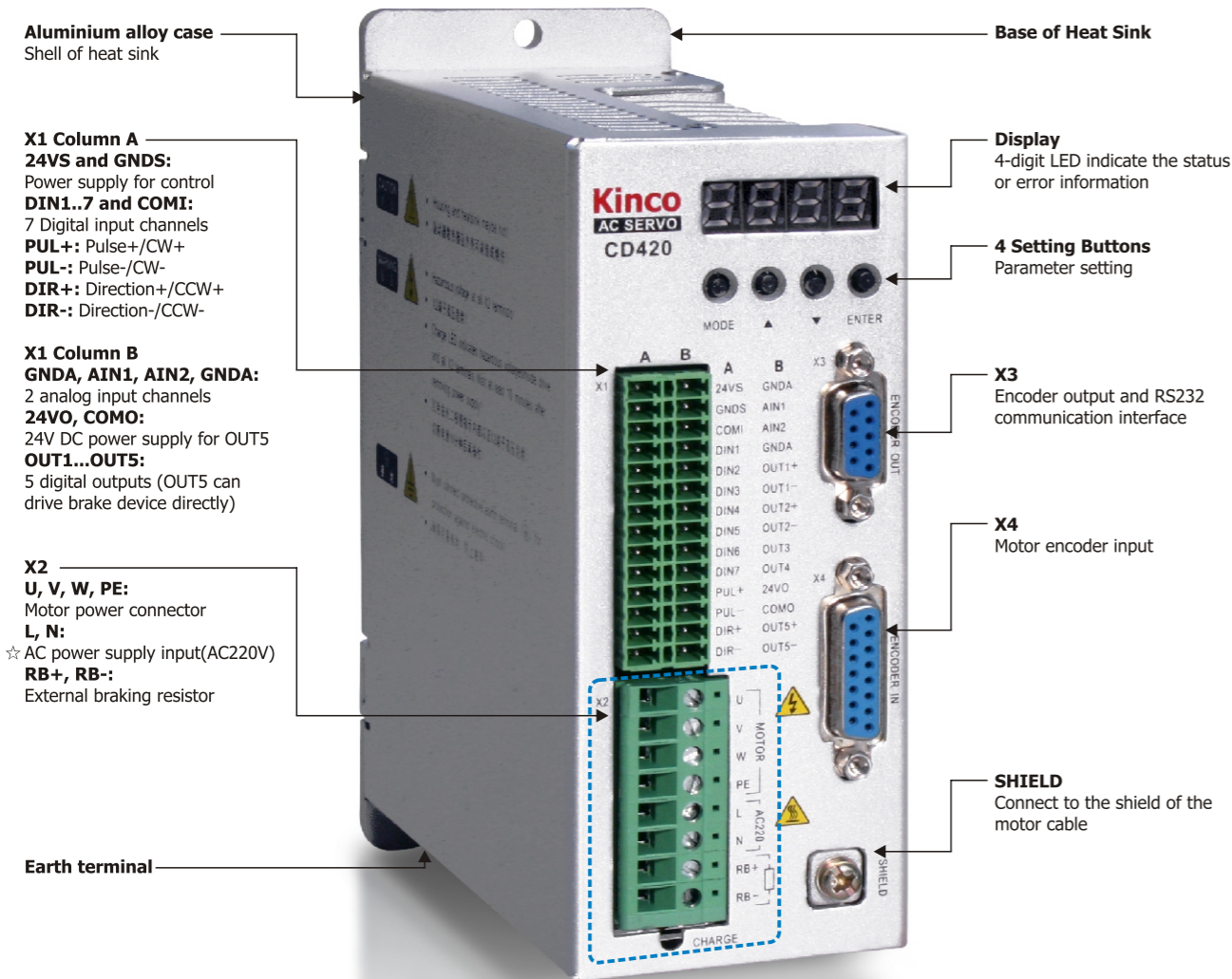


Servo and SMH/SME Motor Selection Table

Category	Servo Driver	Servo Motor	Description	Power/brake Cable	Encoder Cable	Rated Speed/ Rated Torque/ Rated Current		
Small Inertia 220V	CD420-AA-000 CD422-AA-000	SMH60S-0020-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCA-LL-KH	3000rpm/ 0.64Nm/ 1.6A		
		SMH60S-0020-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCA-LL-KH			
		SMH60S-0020-30AAK-3LKN	HFO standard connector	MOT-005-LL-KC0	ENCCA-LL-KC0			
		SMH60S-0020-30AAK-3LKM	Intercontec connector	MOT-005-LL-KM1	ENCCA-LL-KM1	3000rpm/ 1.27Nm/ 3.1A		
		SMH60S-0020-30ABK-3LKM	Intercontec connector with brake	MOT-005-LL-KM1-B	ENCCA-LL-KM1			
		SMH60S-0040-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCA-LL-KH			
		SMH60S-0040-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCA-LL-KH			
		SMH60S-0040-30AAK-3LKN	HFO standard connector	MOT-005-LL-KC0	ENCCA-LL-KC0			
		SMH60S-0040-30AAK-3LKM	Intercontec connector	MOT-005-LL-KM1	ENCCA-LL-KM1			
		SMH60S-0040-30ABK-3LKM	Intercontec connector with brake	MOT-005-LL-KM1-B	ENCCA-LL-KM1			
		SMH80S-0075-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCA-LL-KH	3000rpm/ 2.39Nm/ 3.9A		
		SMH80S-0075-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCA-LL-KH			
	SMH80S-0075-30AAK-3LKN	HFO standard connector	MOT-005-LL-KC0	ENCCA-LL-KC0				
	SMH80S-0075-30AAK-3LKM	Intercontec connector	MOT-005-LL-KM1	ENCCA-LL-KM1	3000rpm/ 1.27Nm/ 3.1A			
	SMH80S-0075-30ABK-3LKM	Intercontec connector with brake	MOT-005-LL-KM1-B	ENCCA-LL-KM1				
	SME60S-0020-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCF-LL-FH				
	SME60S-0020-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCF-LL-FH				
	SME60S-0040-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCF-LL-FH	3000rpm/ 1.27Nm/ 3.1A			
	SME60S-0040-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCF-LL-FH				
	SME80S-0075-30AAK-3LKH	Cable connector	MOT-005-LL-KL	ENCCF-LL-FH				
	SME80S-0075-30ABK-3LKH	Cable connector and brake	MOT-005-LL-KL/BRA-LL-KL	ENCCF-LL-FH	3000rpm/ 2.39Nm/ 3.9A			
	SMH80S-0100-30AAK-3LKH	Cable connector	MOT-008-LL-KL	ENCCA-LL-KH				
	SMH80S-0100-30ABK-3LKH	Cable connector and brake	MOT-008-LL-KL/BRA-LL-KL	ENCCA-LL-KH				
	SMH80S-0100-30AAK-3LKN	HFO standard connector	MOT-008-LL-KC0	ENCCA-LL-KC0	3000rpm/ 3.18Nm/ 6.3A			
SMH80S-0100-30AAK-3LKM	Intercontec connector	MOT-008-LL-KM1	ENCCA-LL-KM1					
SMH80S-0100-30ABK-3LKM	Intercontec connector with brake	MOT-008-LL-KM1-B	ENCCA-LL-KM1					
Medium Inertia 220V	CD430-AA-000 CD432-AA-000	SMH110D-0105-20AAK-4LKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1	2000rpm/ 5Nm/ 5.9A		
		SMH110D-0105-20ABK-4LKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1			
		SMH110D-0105-20AAK-4LKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1			
		SMH110D-0105-20ABK-4LKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1	2000rpm/ 6Nm/ 6.2A		
		SMH110D-0126-20AAK-4LKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1			
		SMH110D-0126-20ABK-4LKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1			
		SMH110D-0126-20AAK-4LKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1	3000rpm/ 4Nm/ 6.5A		
		SMH110D-0126-20ABK-4LKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1			
		SMH110D-0125-30AAK-4LKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1			
		SMH110D-0125-30ABK-4LKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1	3000rpm/ 4Nm/ 4.3A		
		SMH110D-0125-30AAK-4LKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1			
		SMH110D-0125-30ABK-4LKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1			
	Medium Inertia 380V	CD620-AA-000 CD622-AA-000	SMH110D-0126-30AAK-4HKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1	3000rpm/ 5Nm/ 5.9A	
			SMH110D-0126-30ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1		
			SMH110D-0126-30AAK-4HKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1		
			SMH110D-0126-30ABK-4HKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1	3000rpm/ 5Nm/ 5.9A	
			SMH110D-0157-30AAK-4HKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1		
			SMH110D-0157-30ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1		
		Medium Inertia 220V	CD430-AA-000 CD432-AA-000 CD620-AA-000 CD622-AA-000	SMH110D-0157-30AAK-4HKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1	3000rpm/ 7.5Nm/ 6.3A
				SMH110D-0157-30ABK-4HKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1	
				SMH110D-0188-30AAK-4HKC	YL22 standard connector	MOT-008-LL-KC1	ENCCA-LL-KC1	
				SMH110D-0188-30ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	ENCCA-LL-KC1	2000rpm/ 10Nm/ 7.6A
				SMH110D-0188-30AAK-4HKD	Intercontec connector	MOT-008-LL-KM2	ENCCA-LL-KM1	
				SMH110D-0188-30ABK-4HKD	Intercontec connector with brake	MOT-008-LL-KM2-B	ENCCA-LL-KM1	
Medium Inertia 380V	CD620-AA-000 CD622-AA-000	SMH130D-0210-20AAK-4HKC	YL24 standard connector	MOT-008-LL-KC2	2000rpm/ 11.1Nm/ 7.1A			
		SMH130D-0210-20ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B				
		SMH150D-0230-20AAK-4HKC	YL24 standard connector	MOT-008-LL-KC2				
		SMH130D-0210-20ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B	2000rpm/ 10Nm/ 7.6A			
		SMH150D-0230-20ABK-4HKC	YL24 standard connector	MOT-008-LL-KC2				
		SMH150D-0230-20ABK-4HKC	YL24 standard connector and brake	MOT-008-LL-KC2-B				

Note: 1. User select the compatible motors themselves.
2. CD432/622 are coming soon.

Panel and Interface Description of Servo Drivers CD420/430/620



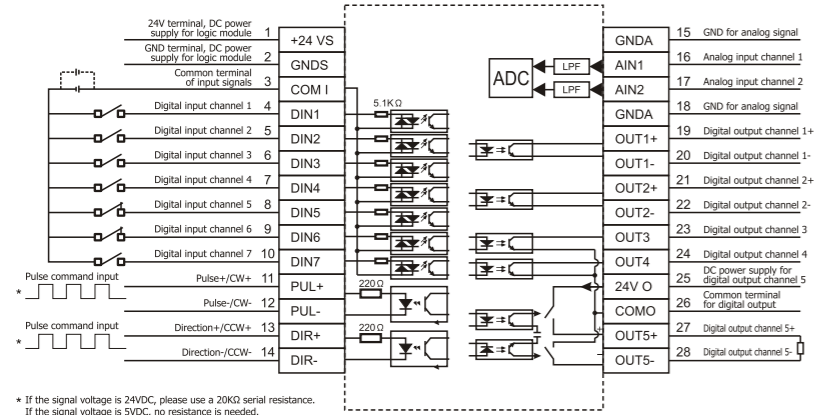
Note: 1. CD420/430/620 share the same interface definition except for the X2 and X5 power interfaces.
2. Suggested brake resistor: CD420 75ohms/100W, CD430 39ohms/200W, CD620 75ohms/200W. The customer should choose the power of brake resistor according to the actual application.

Technical Specifications of Servo Drivers CD420/430/620

Model parameter		CD420-AA-000	CD430-AA-000	CD620-AA-000
Power	Main supply voltage	Single-phase AC220V -20/+15% 47~63Hz	Single-phase or 3-phase AC220V -20/+15% 47~63Hz	3-phase AC380V -20/+15% 47~63Hz
	Control circuit voltage	18VDC~30VDC 1A		
Current	Max. continuous current	4A	10A	7A
	Peak current(PEAK)	15A	27.5A	25A
Feedback signal		2500PPR (incremental encoder with 5V)		
Brake chopper		Use an external braking resistor according to application, mainly in occasion of quick stop.		
Brake chopper threshold		DC380V±5V		DC680V±5V
Over-voltage alarming threshold		DC400V±5V		
Under-voltage alarming threshold		DC200V±5V		
Cooling method		Natural air cooling	Fan	
Weight		1.2kg	2.4kg	
Position Mode	Max. frequency of input pulse	Differential signal: 500KPPS, Open-collector signal: 200KPPS		
	Pulse command mode	Pulse+direction, CCW+CW, (5V, if the input is 24V, the 2K resistor is needed) (do not support A+B phase)		
	Command smoothing	Low-pass filtering(Adjustable by internal parameter setting)		
	Feedforward gain	Adjustable by internal parameter setting		
	Electronic gear ratio	Setting range, Gear factor: -32768~32767, Gear divider: 1~32767, 1/50≤ Gear factor/Gear divider ≤50		
Speed Mode	Position loop sampling frequency	1KHz		
	Analog input voltage range	-10V~+10V(Resolution 12bit)		
	Input impedance	200K		
	Analog input sampling frequency	4KHz		
Torque Mode	Command source	External analog command / Adjustable by internal parameter setting		
	Command smoothing	Low-pass filtering(Adjustable by internal parameter setting)		
	Input voltage dead-zone setting	Adjustable by internal parameter setting		
	Input voltage offset setting	Adjustable by internal parameter setting		
	Speed limit	Adjustable by internal parameter setting		
	Torque limit	Adjustable by internal parameter setting / External analog command control		
	Speed loop sampling frequency	4KHz		
	Current sampling frequency	16KHz		
Digital Input	Input specification	7 digital inputs, with COM1 terminal for PNP (high level valid 12.5-30V) or NPN (low level valid) connection.		
	Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal positive section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain		
Digital Output	Output specification	5 digital outputs, OUT1~OUT4 current is 100mA, OUT5 current is 800mA, can drive brake device directly		
	Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found, multi-position reached		
Protection functions		Over-voltage protection, under-voltage protection, motor over-heat protection(FT), short-circuit protection, drive over-heat protection, etc.		
Communication interface		RS232 (Connections with PC: 2-1, 3-6, 5-5)		
Operation Environment	Operating temperature	0~40℃		
	Storage temperature	-10℃~70℃		
	Humidity(non-condensing)	Below 90%RH		
	Protection class	IP20		
	Installation environment	Installed in a dust-free, dry and lockable environment(such as in a electrical cabinet)		
	Installation mode	Vertical installation		
Altitude		No power limitation below 1000m		
Atmospheric pressure		86kpa~106kpa		

Wiring Diagram for Servo Drivers CD420/430/620

Wiring Diagram for Position Control Mode



* If the signal voltage is 24VDC, please use a 20kΩ serial resistance.
If the signal voltage is 5VDC, no resistance is needed.

Default setting for digital inputs:
Din 1: Driver enable
Din 2: Fault reset
Din 3: Operation mode
Din 4: P control
Din 5: Positive limit
Din 6: Negative limit
Din 7: Home signal

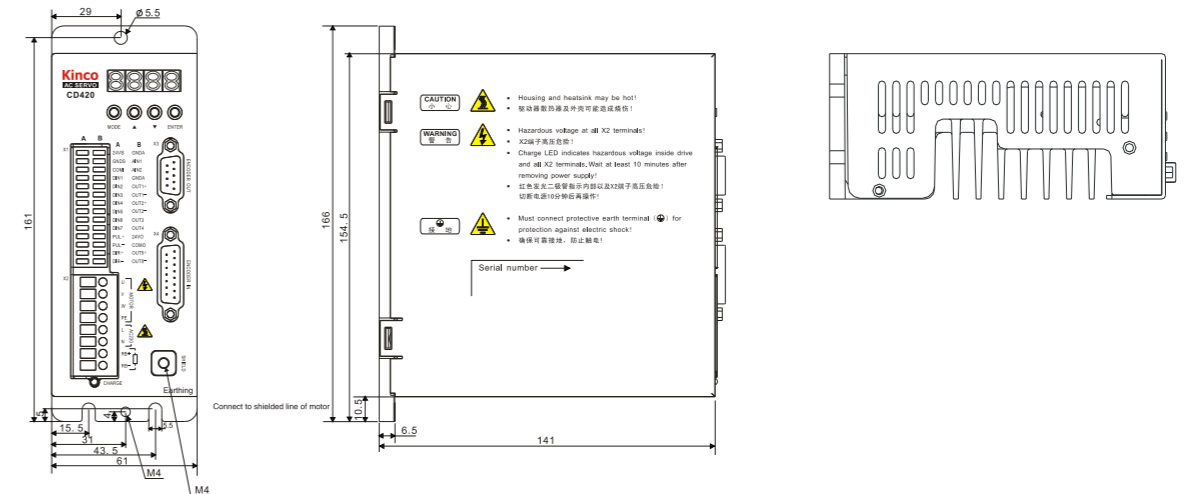
To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Reverse command
- Internal speed section control
- Internal position section control
- Start homing
- Active command
- Quick stop
- Switch electronic gear ratio
- Switch gain

Default setting for digital output:
Out 1: Ready
Out 2: Error
Out 3: Position reached
Out 4: Zero velocity
Out 5: Motor brake

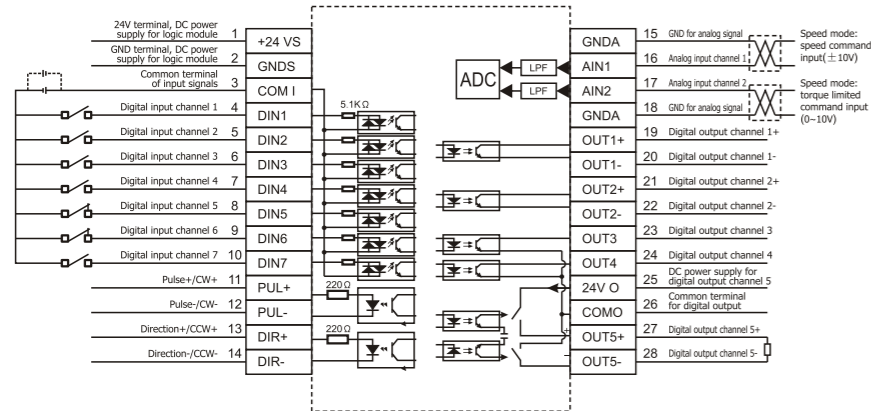
To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Index
- Motor brake
- Position limiting
- References found
- Multi-position reached

Mechanical Dimension Diagram for Servo Driver CD420/430/620 (Unit: mm)

Mechanical Dimension Diagram for CD420



Wiring Diagram for Speed Control Mode



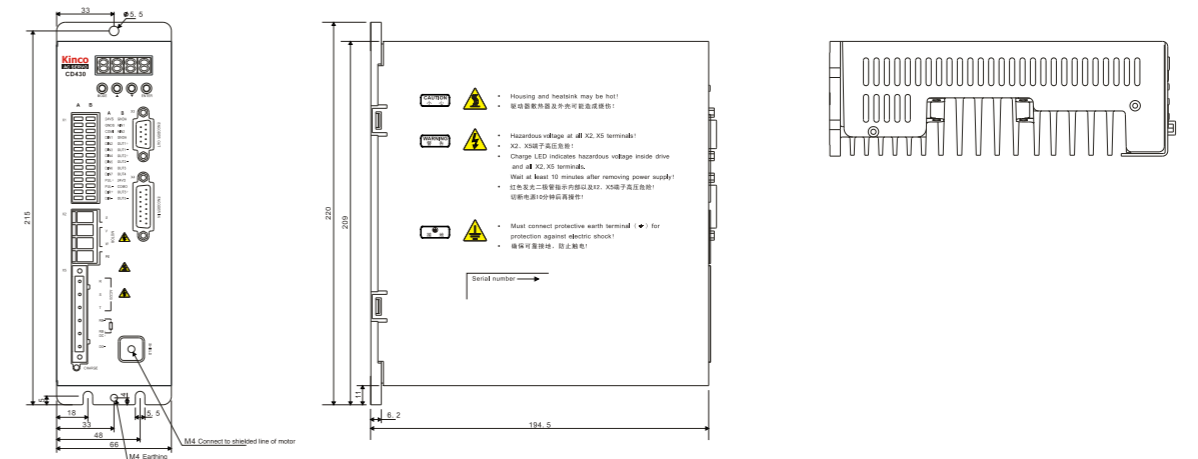
Default setting for digital inputs:
Din 1: Driver enable
Din 2: Fault reset
Din 3: Operation mode
Din 4: P control
Din 5: Positive limit
Din 6: Negative limit
Din 7: Home signal

To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Reverse command
- Internal speed section control
- Internal position section control
- Start homing
- Active command
- Quick stop
- Switch electronic gear ratio
- Switch gain

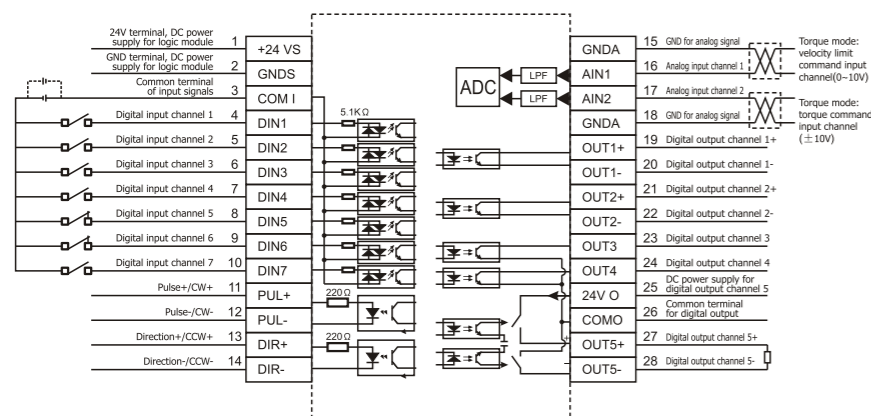
Default setting for digital output:
Out 1: Ready
Out 2: Error
Out 3: Position reached
Out 4: Zero velocity
Out 5: Motor brake

To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Index
- Motor brake
- Position limiting
- References found
- Multi-position reached

Mechanical Dimension Diagram for CD430



Wiring Diagram for Torque Control Mode



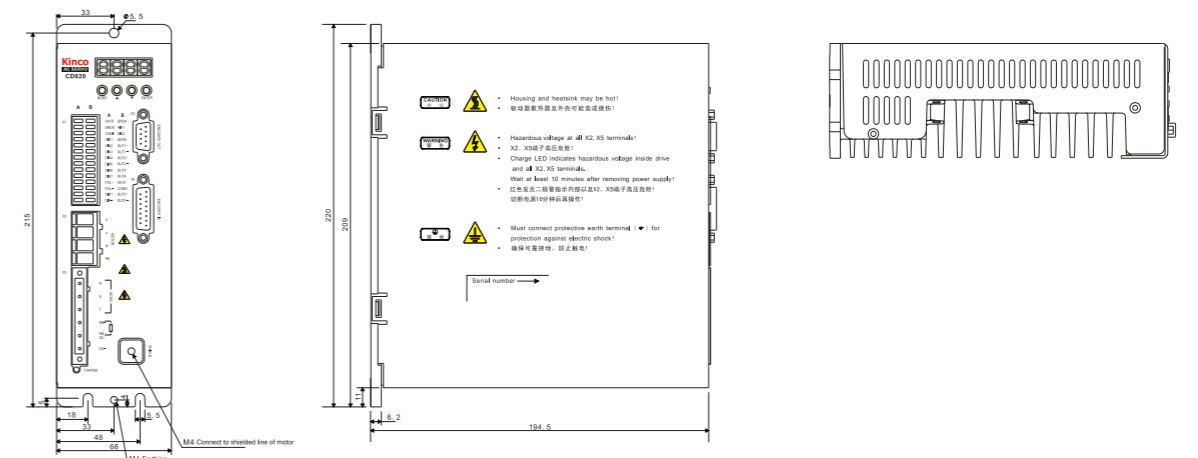
Default setting for digital inputs:
Din 1: Driver enable
Din 2: Fault reset
Din 3: Operation mode
Din 4: P control
Din 5: Positive limit
Din 6: Negative limit
Din 7: Home signal

To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Reverse command
- Internal speed section control
- Internal position section control
- Start homing
- Active command
- Quick stop
- Switch electronic gear ratio
- Switch gain

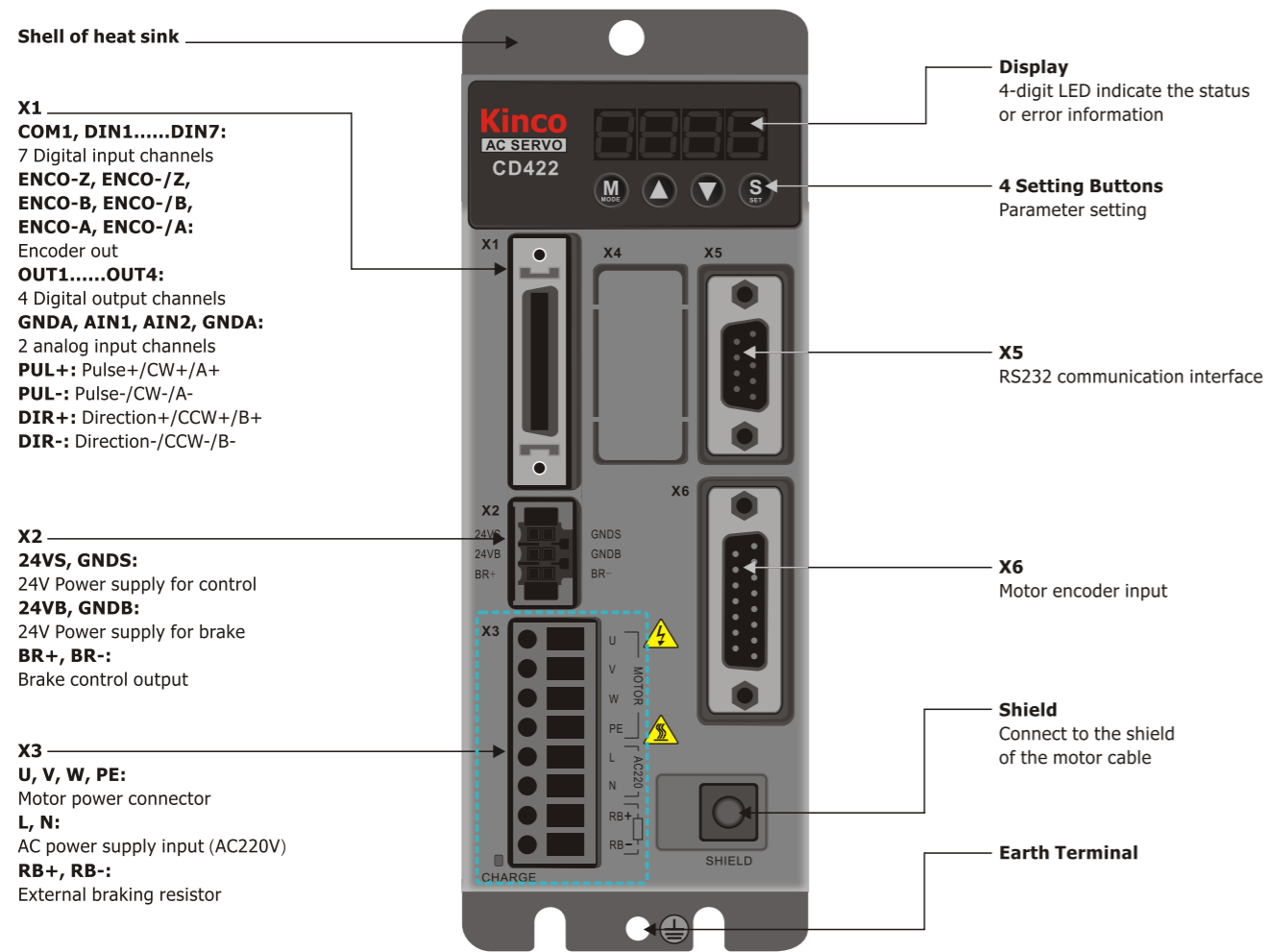
Default setting for digital output:
Out 1: Ready
Out 2: Error
Out 3: Position reached
Out 4: Zero velocity
Out 5: Motor brake

To use other functions, please redefine the digital inputs. Other functions that can be defined are as follows:
- Index
- Motor brake
- Position limiting
- References found
- Multi-position reached

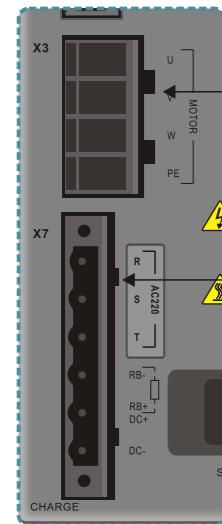
Mechanical Dimension Diagram for CD620



Panel and Interface Description of Servo Drivers CD422/432/622



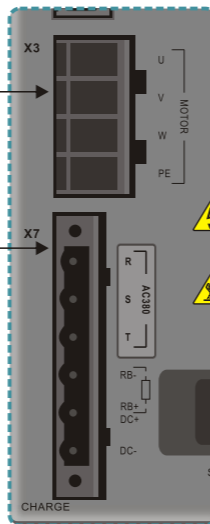
CD422 (AC220V)



CD432 (AC220V)

X3
U, V, W, PE:
 Motor power connector

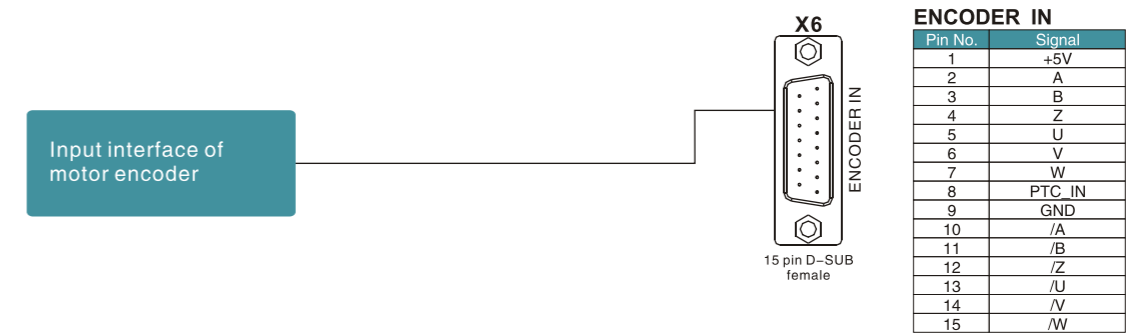
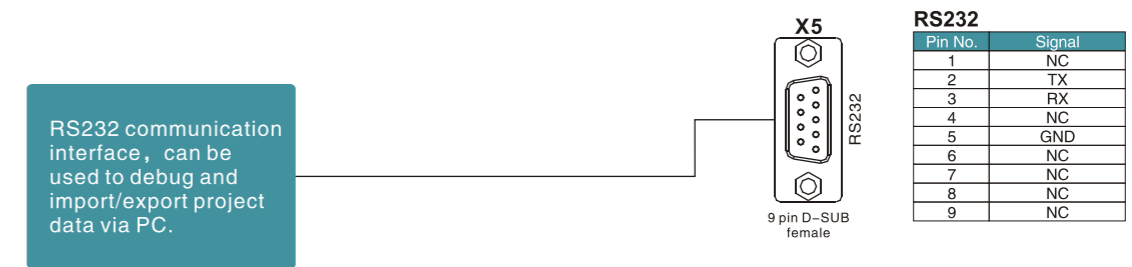
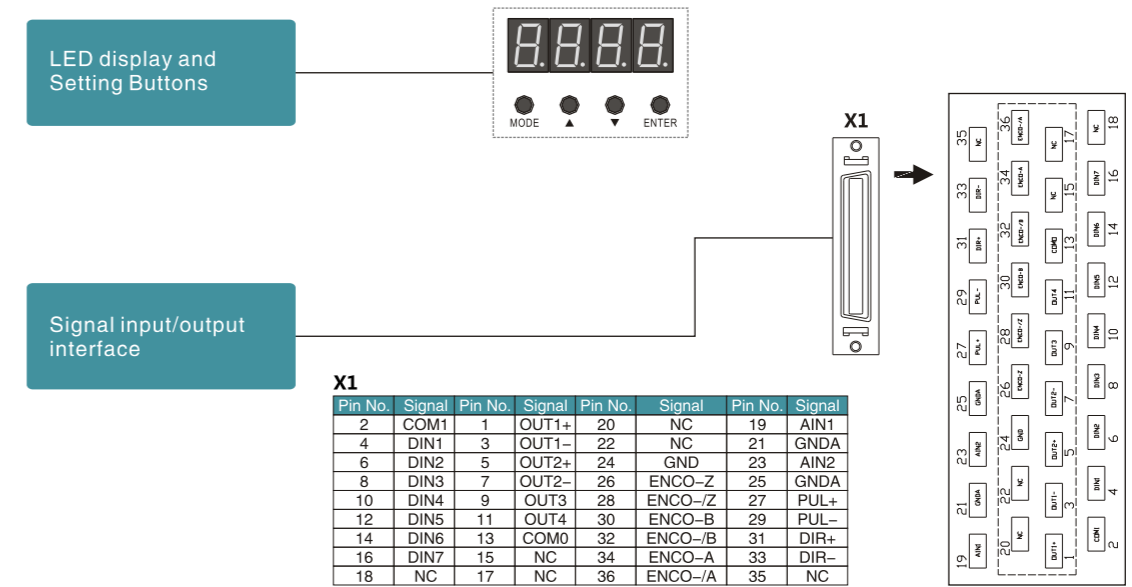
X7
R, S, T:
 AC power supply input (AC380V)
RB+, RB-:
 External braking resistor
DC+, DC-:
 DC bus interface (DC540V ± 20%)



CD622 (AC380V)

Note: 1. CD422/432/622 share the same interface definition except the X3 and X7 power interfaces;
 2. Suggested brake resistor: CD422 75ohms/100W, CD432 39ohms/200W, CD622 75ohms/200W. The customer should choose the power of brake resistor according to the actual application.

Communication Port Description of Servo Drivers CD422/432/622

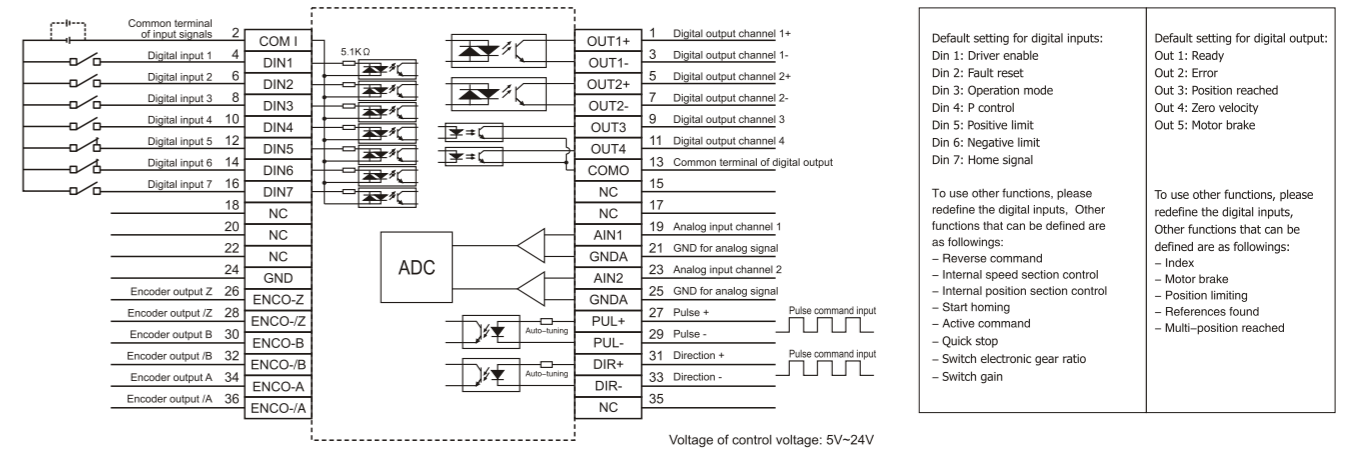


Technical Specifications of Servo Drivers CD422/432/622

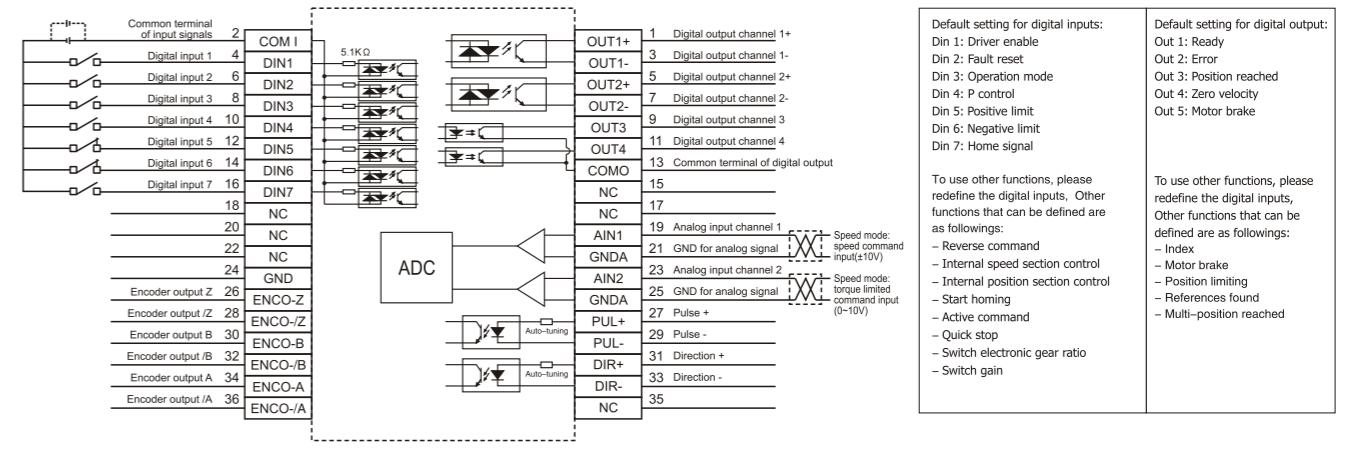
Model parameter		CD422-AA-000	CD432-AA-000	CD622-AA-000
Power	Main supply voltage	Single-phase AC220V -20/+15% 47~63Hz	Single-phase or 3-phase AC220V -20/+15% 47~63Hz	3-phase AC380V -20/+15% 47~63Hz
	Control circuit voltage	18VDC~30VDC 1A		
Current	Max. continuous current	4A	10A	7A
	Peak current(PEAK)	15A	27.5A	25A
	Feedback signal	2500PPR (incremental encoder with 5V)		
Brake chopper	Use an external braking resistor according to application, mainly in occasion of quick stop.			
Brake chopper threshold	DC380V ± 5V		DC680V ± 5V	
Over-voltage alarming threshold	DC400V ± 5V		DC700V ± 5V	
Under-voltage alarming threshold	DC200V ± 5V		DC400V ± 5V	
Cooling method	Natural air cooling	Fan		
Weight	1.2kg	2.4kg		
Position Mode	Max. frequency of input pulse	Differential signal: 500KPPS, Open-collector signal: 200KPPS		
	Pulse command mode	Pulse+direction, CCW+CW, A+B phase(5V-24V)		
	Command smoothing	Low-pass filtering(Adjustable by internal parameter setting)		
	Feedforward gain	Adjustable by internal parameter setting		
	Electronic gear ratio	Setting range, Gear factor: -32768~32767, Gear divider: 1~32767, $1/50 \leq \text{Gear factor}/\text{Gear divider} \leq 50$		
Position loop sampling frequency	1KHz			
Speed Mode	Analog input voltage range	-10V~+10V(Resolution 12bit)		
	Input impedance	200K		
	Analog input sampling frequency	4KHz		
	Command source	External analog command / Adjustable by internal parameter setting		
	Command smoothing	Low-pass filtering(Adjustable by internal parameter setting)		
Torque Mode	Input voltage dead-zone setting	Adjustable by internal parameter setting		
	Input voltage offset setting	Adjustable by internal parameter setting		
	Speed limit	Adjustable by internal parameter setting		
	Torque limit	Adjustable by internal parameter setting / External analog command control		
	Speed loop sampling frequency	4KHz		
Digital Input	Analog voltage input range	-10V~+10V(Resolution 12bit)		
	Input impedance	200K		
	Input sampling frequency	4KHz		
	Command source	External analog command / internal command		
	Command smoothing	Low-pass filtering(Adjustable by internal parameter setting)		
Digital Output	Speed limit	Adjustable by internal parameter setting / External analog command control		
	Input voltage dead-zone setting	Adjustable by internal parameter setting		
	Input voltage offset setting	Adjustable by internal parameter setting		
	Current sampling frequency	16KHz		
	Input specification	7 digital inputs, with COM1 terminal for PNP (high level valid 12.5-30V) or NPN (low level valid) connection.		
Input function	Define freely according to requirement, supporting following functions: Driver enable, driver fault reset, driver mode control, proportional control, positive limit, negative limit, homing signal, reverse command, internal speed section control, internal position section control, quick stop, start homing, active command, switch electronic gear ratio, switch gain			
Output specification	5 digital outputs, OUT1~OUT4 current is 100mA, OUT5 current is 800mA, can drive brake device directly			
Output function	Define freely according to requirement, supporting following functions: Driver ready, driver fault, position reached, motor at zero speed, motor brake, motor speed reached, Z signal, maximum speed obtained in torque mode, motor brake, position limiting, reference found, multi-position reached			
Protection functions	Over-voltage protection, under-voltage protection, motor over-heat protection(°T), short-circuit protection, drive over-heat protection, etc.			
Communication interface	RS232 (Connections with PC: 2-2, 3-3, 5-5)			
Operation Environment	Operating temperature	0~40°C		
	Storage temperature	-10°C~70°C		
	Humidity(non-condensing)	Below 90%RH		
	Protection class	IP20		
	Installation environment	Installed in a dust-free, dry and lockable environment(such as in a electrical cabinet)		
	Installation mode	Vertical installation		
Altitude	No power limitation below 1000m			
Atmospheric pressure	86kpa~106kpa			

Wiring Diagram for Servo Drivers CD422/432/622

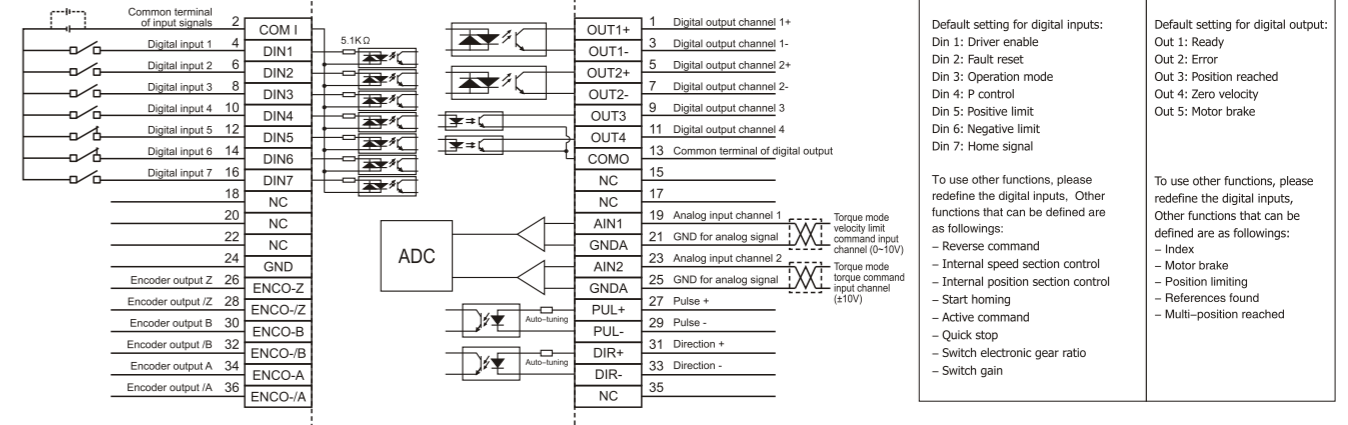
Wiring Diagram for Position Control Mode



Wiring Diagram for Speed Control Mode

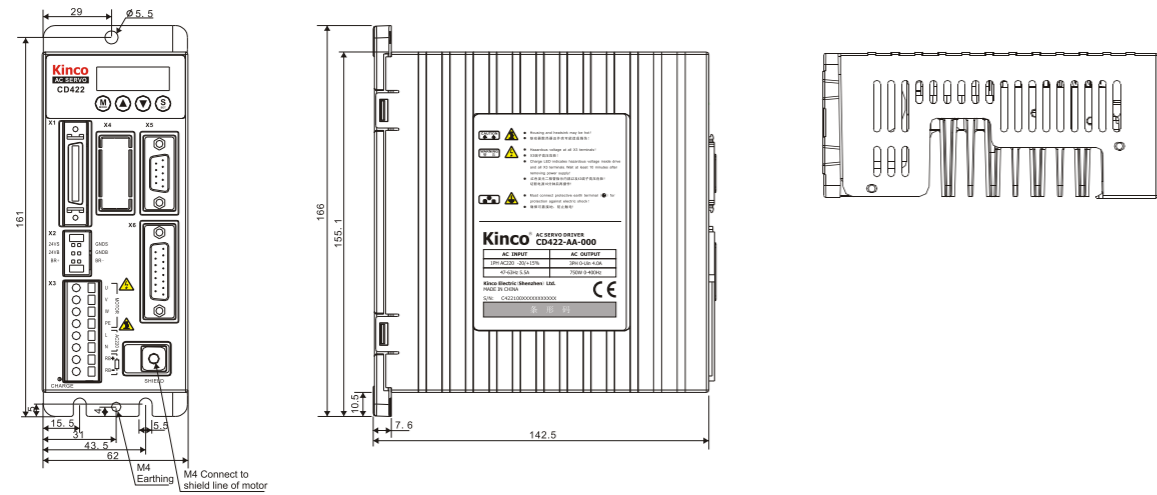


Wiring Diagram for Torque Control Mode

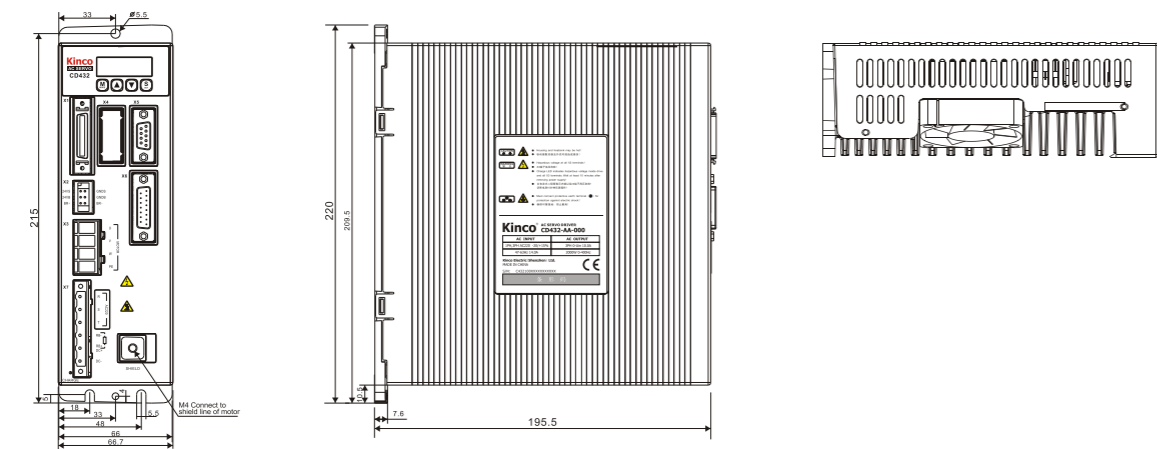


Mechanical Dimension Diagram for Servo Driver CD422/432/622 (Unit: mm)

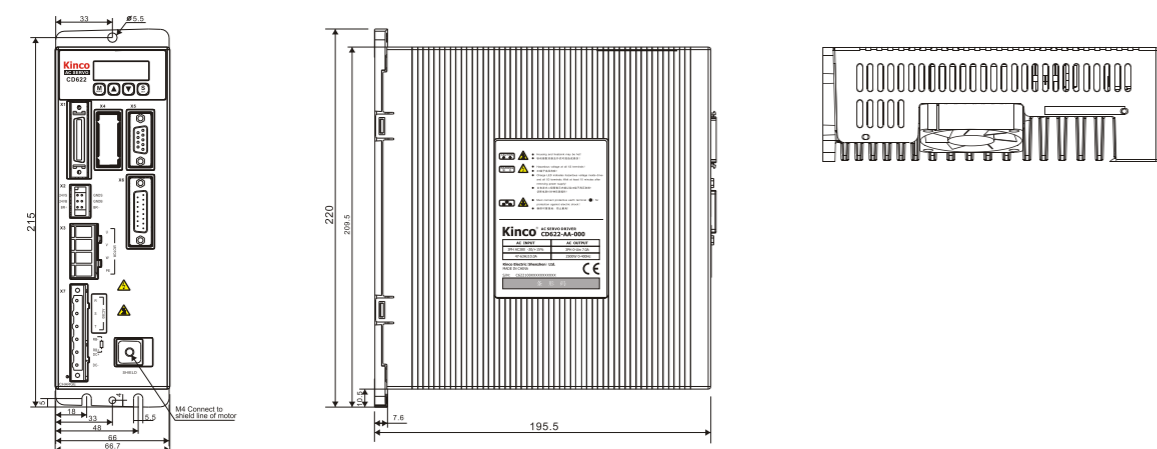
Mechanical Dimension Diagram for CD422



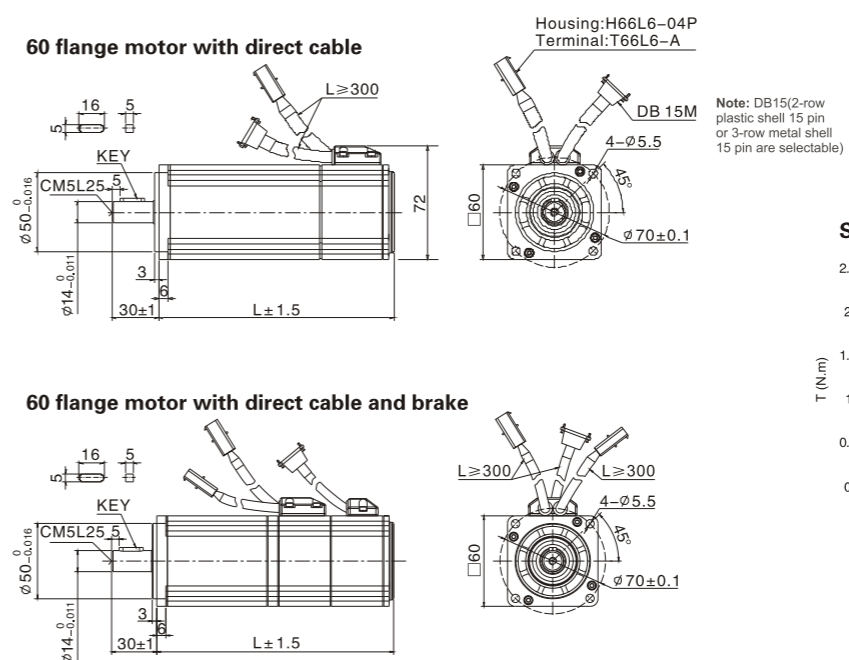
Mechanical Dimension Diagram for CD432



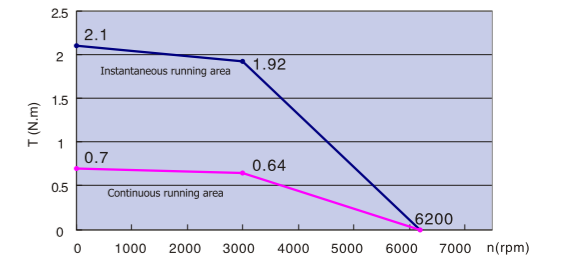
Mechanical Dimension Diagram for CD622



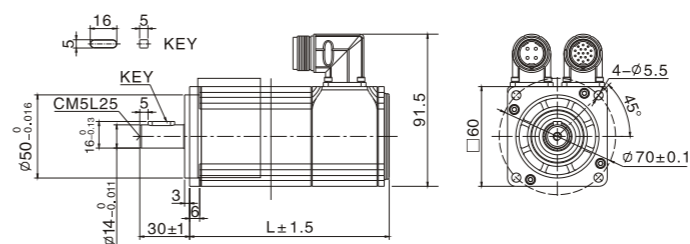
Dimensions/Torque curve of SMH/SME 60 Servo Motors



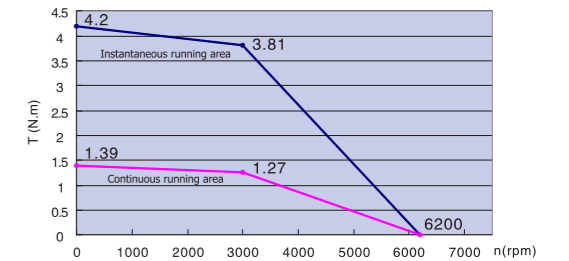
SMH/SME60S-0020-30A K-3LK 200W



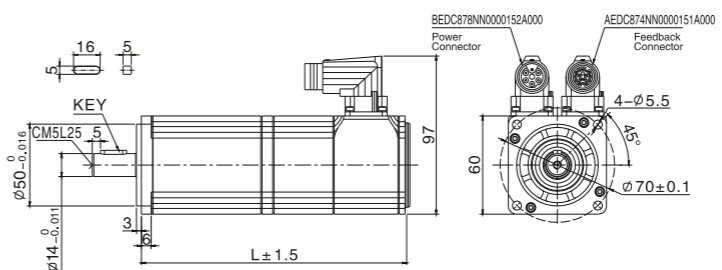
60 flange motor with HFO series standard connector



SMH/SME60S-0040-30A K-3LK 400W

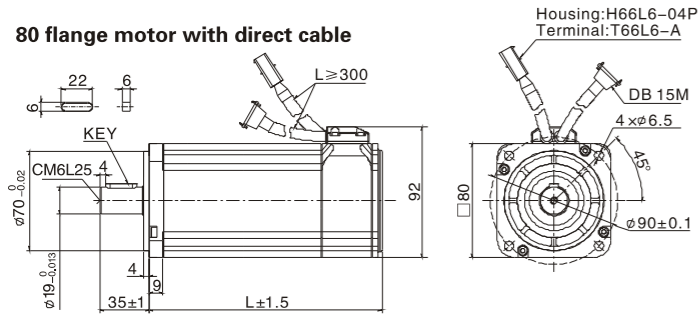


60 flange motor with Intercontec connector



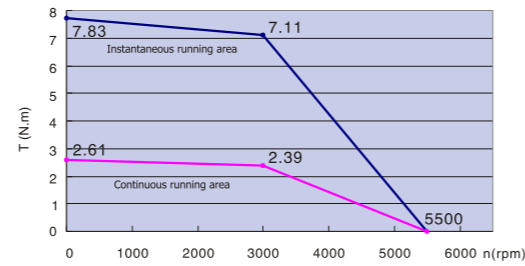
Dimensions/Torque curve of SMH/SME 80 Servo Motors

80 flange motor with direct cable

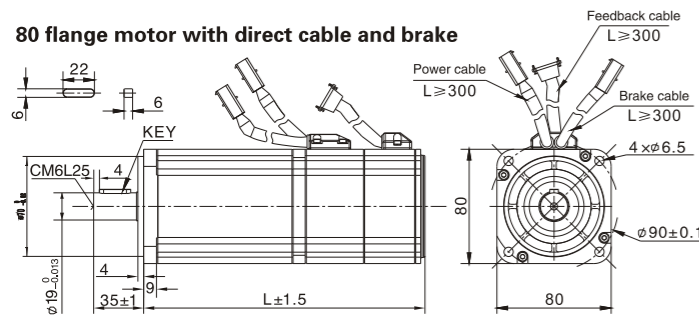


Note: DB15(2-row plastic shell 15 pin or 3-row metal shell 15 pin are selectable)

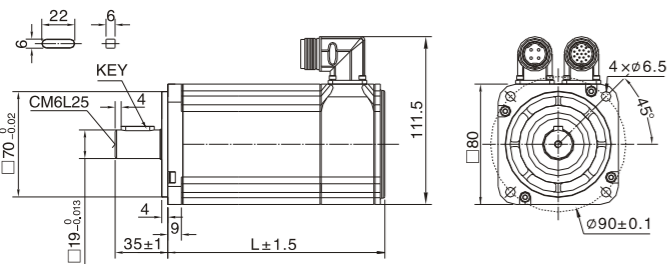
SMH/SME80S-0075-30A□K-3LK□ 750W



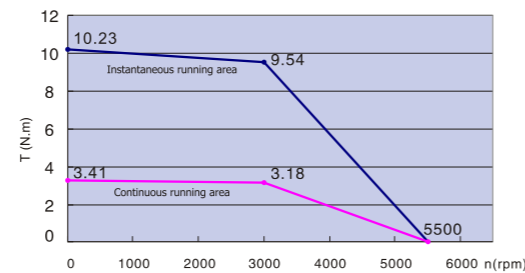
80 flange motor with direct cable and brake



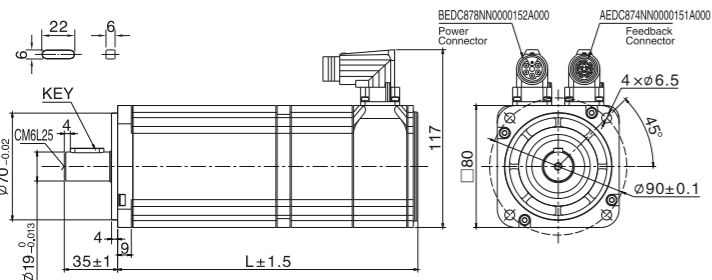
80 flange motor with HFO series standard connector



SMH80S-0100-30A□K-3LK□ 1000W



80 flange motor with Intercontec connector

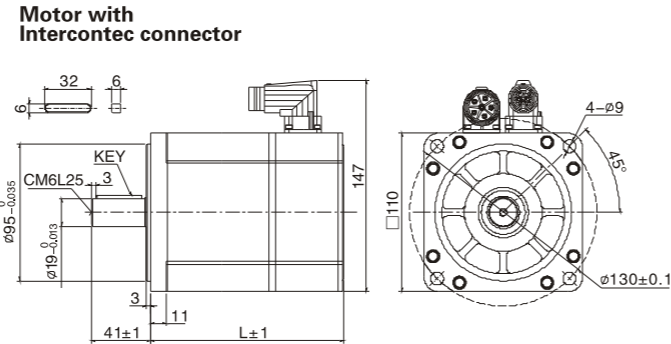
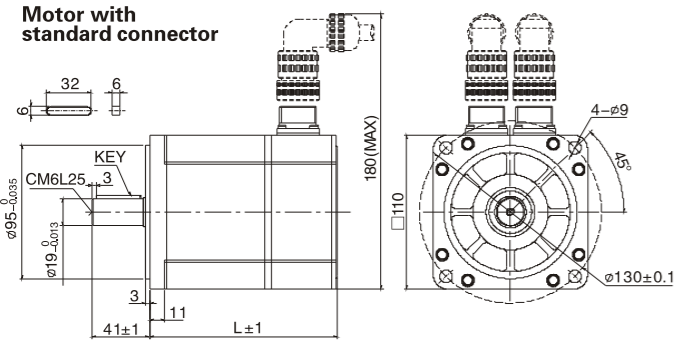


Technical Specifications of SMH/SME60/80 Motors

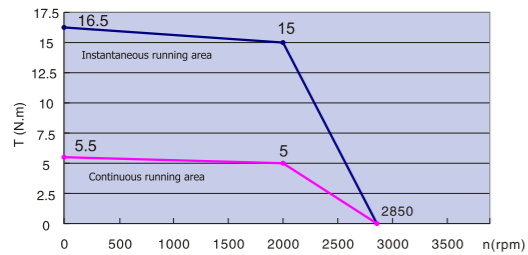
Motor series	SMH Series Motor				SME Series Motor			
	Small inertia flange size 60mm		Small inertia flange size 80mm		Small inertia flange size 60mm		Small inertia flange size 80mm	
Model	SMH60S-0020-30A□K-3LK□	SMH60S-0040-30A□K-3LK□	SMH80S-0075-30A□K-3LK□	SMH80S-0100-30A□K-3LK□	SME60S-0020-30A□K-3LK□	SME60S-0040-30A□K-3LK□	SME80S-0075-30A□K-3LK□	
Compatible driver	CD420-AA-000, CD422-AA-000			CD430-AA-000 CD432-AA-000	CD420-AA-000, CD422-AA-000			
DC link voltage UDC	300	300	300	300	300	300	300	
Continuous performance	Rated power P_N (W)	200	400	750	1000	200	400	750
	Rated torque T_N (Nm)	0.64	1.27	2.39	3.18	0.64	1.27	2.39
	Rated speed n_n (rpm)	3000	3000	3000	3000	3000	3000	3000
	Rated current I_N (A)	1.6	3.1	3.9	6.3	1.6	3.1	3.9
Maximum torque T_m (Nm)	1.92	3.82	7.17	9.48	1.92	3.81	7.17	
Maximum current I_m (A)	4.8	9.3	11.7	18.9	4.8	9.3	11.7	
Standstill torque T_s (Nm)	0.7	1.39	2.63	3.3	0.7	1.4	2.63	
Standstill current I_s (A)	1.79	3.38	4.4	6.93	1.76	3.41	4.29	
Resistance line-line R_L (Ω)	8.02	3.52	1.4	0.86	10.4	5.8	3	
Inductance line-line L_L (mH)	16.3	7.8	7.5	4.5	25.4	15	16.2	
Electrical time constant τ_e (ms)	2.03	2.22	5.35	5.23	2.44	2.59	5.4	
Mechanical time constant τ_m (ms)	2.26	1.35	0.75	0.89	2.93	1.93	1.49	
Reverse voltage constant K_e (V/krpm)	29	29	40	34	29	29	40	
Torque constant K_t (Nm/A)	0.48	0.48	0.662	0.562	0.48	0.48	0.662	
Rotor moment of inertia J_m (Kg · cm ²)	0.375	0.51	1.36	1.9	0.375	0.443	1.255	
	0.379 (with brake)	0.514 (with brake)	1.385 (with brake)	1.925 (with brake)	0.379 (with brake)	0.447 (with brake)	1.28 (with brake)	
Pole pair number	3	3	3	3	3	3	3	
Maximum voltage rising du/dt (KV/ μ s)	8	8	8	8	8	8	8	
Insulation class	F	F	F	F	F	F	F	
Maximum radial force F (N)	180	180	335	335	180	180	335	
Maximum axial force F (N)	90	90	167.5	167.5	90	90	167.5	
Weight G(Kg)	1.3	1.8	3.3	3.9	1.3	1.6	2.9	
	1.8 (with brake)	2.3 (with brake)	4 (with brake)	4.6 (with brake)	1.8 (with brake)	2.1 (with brake)	3.6 (with brake)	
Length of motor L(mm)	120	150	147	167	120±1.5	135±1.5	132±1.5	
	159 ± 1.5(with brake)	189 ± 1.5(with brake)	197 ± 1.5(with brake)	217 ± 1.5(with brake)	159 ± 1.5(with brake)	174 ± 1.5(with brake)	182 ± 1.5(with brake)	
Position feedback device	Incremental encoder 2500ppr							
Cooling method	Totally enclosed, non-ventilated							
Protection level	IP65 for body, shaft sealing IP54							
Environmental conditions for operation	Temperature	-20°C ~ 40°C (Non-freezing)						
	Humidity	Below 90% RH (Non-condensing)						
	Ambient environment	Away from active gas, combustible gas, oil drops and dust						
	Altitude	Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise						

Note: □=A: no brake □=H: Cable connector
 □=B: brake □=N: HFO series standard connector
 □=M: Intercontec connector

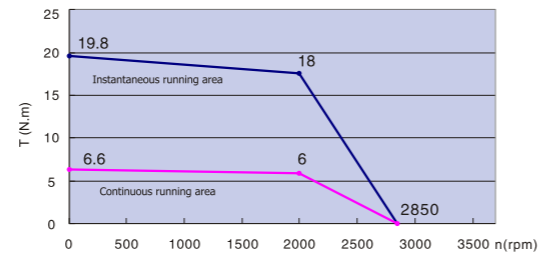
Dimensions/Torque curve of SMH110 Servo Motors



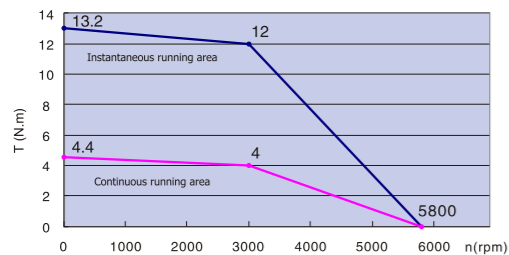
SMH110D-0105-20A□K-4LK□ 1.05KW



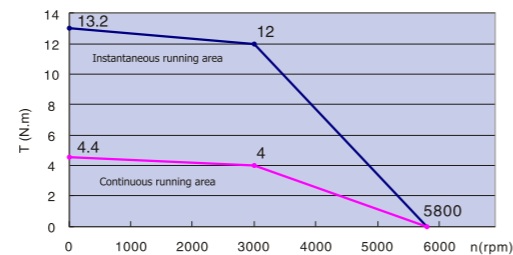
SMH110D-0126-20A□K-4LK□ 1.26KW



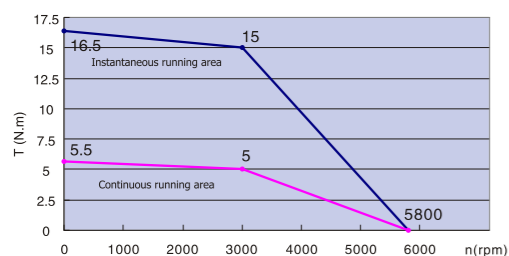
SMH110D-0125-30A□K-4LK□ 1.25KW



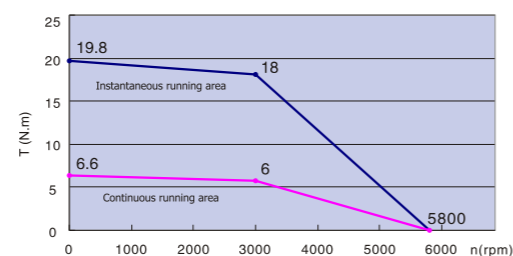
SMH110D-0126-30A□K-4HK□ 1.26KW



SMH110D-0157-30A□K-4HK□ 1.57KW



SMH110D-0188-30A□K-4HK□ 1.88KW



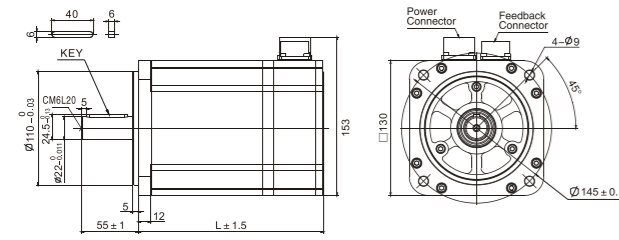
Technical Specifications of SMH110 Servo Motors

Motor series	Medium inertia, flange size 110mm						
Model	SMH110D-0125-30A□K-4LK□	SMH110D-0126-30A□K-4HK□	SMH110D-0105-20A□K-4LK□	SMH110D-0157-30A□K-4HK□	SMH110D-0126-20A□K-4LK□	SMH110D-0188-30A□K-4HK□	
Compatible driver	CD430-AA-000 CD432-AA-000	CD620-AA-000 CD622-AA-000	CD430-AA-000 CD432-AA-000	CD620-AA-000 CD622-AA-000	CD430-AA-000 CD432-AA-000	CD620-AA-000 CD622-AA-000	
DC link voltage UDC	300	560	300	560	300	560	
Continuous performance	Rated power P_N (W)	1250	1260	1050	1570	1260	1880
	Rated torque T_N (Nm)	4.0	4.0	5.0	5.0	6.0	6.0
	Rated speed n_n (rpm)	3000	3000	2000	3000	2000	3000
	Rated current I_N (A)	6.5	4.3	5.9	5.9	6.2	6.2
Maximum torque T_m (Nm)	12	12	15.0	15.0	18.0	18.0	
Maximum current I_m (A)	19.5	12.9	17.7	17.7	18.6	18.6	
Standstill torque T_s (Nm)	4.4	4.4	5.5	5.5	6.6	6.6	
Standstill current I_s (A)	6.82	4.73	6.49	6.49	6.765	6.765	
Resistance line-line R_L (Ω)	0.8	1.83	1.03	1.03	1.258	1.258	
Inductance line-line L_L (mH)	6.4	13.5	7.8	7.8	9.62	9.62	
Electrical time constant τ_e (ms)	7.9	7.37	7.57	7.57	7.64	7.64	
Mechanical time constant τ_m (ms)	1.4	1.63	1.55	1.55	1.65	1.65	
Reverse voltage constant K_e (V/krpm)	45	64	55	55	64	64	
Torque constant K_t (Nm/A)	0.744	1.058	0.910	0.910	1.058	1.058	
Rotor moment of inertia J_m ($\text{Kg} \cdot \text{cm}^2$)	5.8	5.8	7.2	7.2	8.5	8.5	
	5.85 (with brake)	5.85 (with brake)	7.25 (with brake)	7.25 (with brake)	8.55 (with brake)	8.55 (with brake)	
Pole pair number	4	4	4	4	4	4	
Maximum voltage rising du/dt (KV/ μ s)	8	8	8	8	8	8	
Insulation class	F	F	F	F	F	F	
Maximum radial force F (N)	630	630	630	630	630	630	
Maximum axial force F (N)	315	315	315	315	315	315	
Weight G (Kg)	6.2	6.2	7.2	7.2	8.2	8.2	
	8.2(with brake)	8.2(with brake)	9.2(with brake)	9.2(with brake)	10.2(with brake)	10.2(with brake)	
Length of motor L (mm)	168	168	185	185	202	202	
	228 ± 1 (with brake)	228 ± 1 (with brake)	245 ± 1 (with brake)	245 ± 1 (with brake)	262 ± 1 (with brake)	262 ± 1 (with brake)	
Position feedback device	Incremental encoder 2500ppr						
Cooling method	Totally enclosed, non-ventilated						
Protection level	IP65 for body, shaft sealing IP54						
Environmental conditions for operation	Temperature	-20°C ~ 40°C (Non-freezing)					
	Humidity	Below 90% RH (Non-condensing)					
	Ambient environment	Away from active gas, combustible gas, oil drops and dust					
	Altitude	Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise					

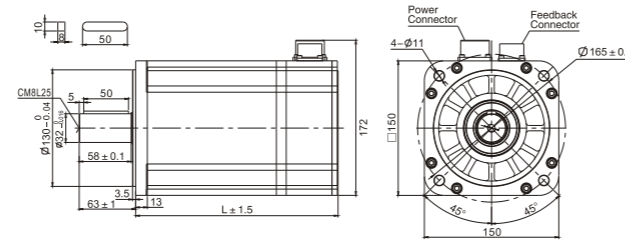
Note: □=A: no brake □=C: Standard connector
 □=B: brake □=D: Intercontec connector

Dimensions/Torque curve of SMH130/150 Servo Motors

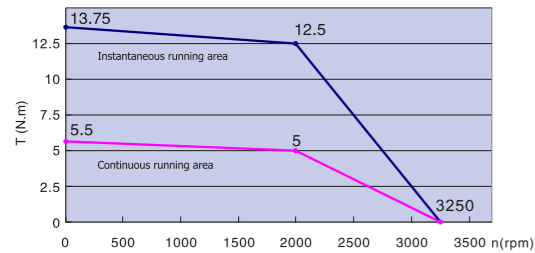
SMH Series motors, flange size 130, with standard connector



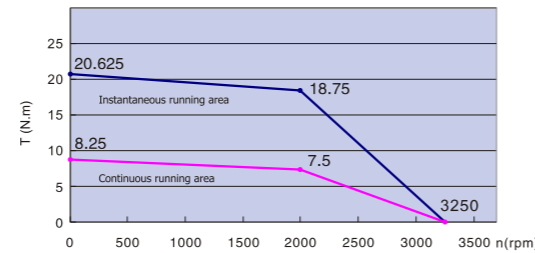
SMH Series motors, flange size 150, with intercontec connector



SMH130D-0105-20A □K-4HK □ 1.05KW



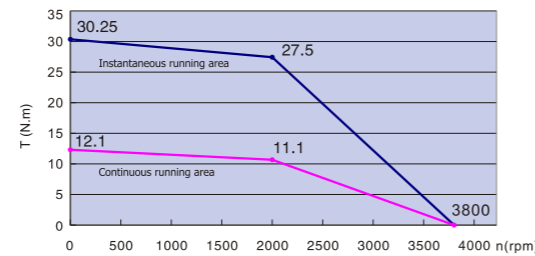
SMH130D-0157-20A □K-4HK □ 1.57KW



SMH130D-0210-20A □K-4HK □ 2.1KW



SMH150D-0230-20A □K-4HK □ 2.3KW



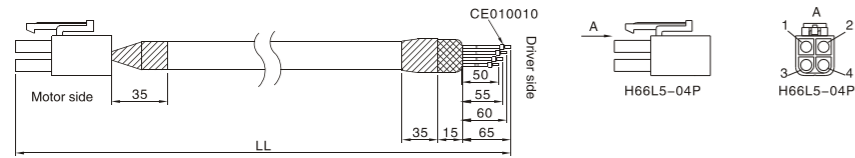
Technical Specification of SMH130/150 Servo Motors

Motor series	Medium inertia, flange size 130mm			Medium inertia, flange size 150mm	
Model	SMH130D-0105-20A □K-4HK □	SMH130D-0157-20A □K-4HK □	SMH130D-0210-20A □K-4HK □	SMH150D-0230-20A □K-4HK □	
Compatible driver	CD430-AA-000, CD620-AA-000 CD432-AA-000, CD622-AA-000		CD620-AA-000, CD622-AA-000		
DC link voltage UDC	560	560	560	560	
Continuous performance	Rated power P_n (W)	1050	1570	2100	
	Rated torque T_n (Nm)	5	7.5	10	11.1
	Rated speed n_n (rpm)	2000	2000	2000	2000
	Rated current I_n (A)	4.3	6.3	7.6	7.1
Maximum torque T_m (Nm)	12.5	18.75	25	27.5	
Maximum current I_m (A)	10.75	15.75	19	17.75	
Standstill torque T_s (Nm)	5.5	8.25	11	12.1	
Standstill current I_s (A)	4.73	6.93	8.36	7.81	
Resistance line-line R_L (Ω)	1.85	1.17	0.98	2.2	
Inductance line-line L_L (mH)	23.7	16.2	14.3	14(AVG)	
Electrical time constant τ_e (ms)	12.81	13.846	14.592	6.36	
Mechanical time constant τ_m (ms)	2.868	2.529	2.268	4.68	
Reverse voltage constant K_e (V/krpm)	70	72	80	100	
Torque constant K_t (Nm/A)	1.1578	1.191	1.3232	1.65	
Rotor moment of inertia J_m (Kg · cm ²)	12	17.7	23.4	33.5	
	12.04 (with brake)	17.74 (with brake)	23.44 (with brake)	33.6 (with brake)	
Pole pair number	4	4	4	4	
Maximum voltage rising du/dt (KV/ μ s)	8	8	8	8	
Insulation class	F	F	F	F	
Maximum radial force F (N)	900	900	900	1200	
Maximum axial force F (N)	450	450	450	600	
Weight G (Kg)	7.5	9.1	10.7	12	
	9.7 (with brake)	11.3 (with brake)	12.9 (with brake)	15.5 (with brake)	
Length of motor L (mm)	159 ± 1.5	179 ± 1.5	199 ± 1.5	226 ± 1.5	
	220 ± 1.5 (with brake)	240 ± 1.5 (with brake)	260 ± 1.5 (with brake)	292 ± 1.5 (with brake)	
Position feedback device	Incremental encoder 2500ppr				
Cooling method	Totally enclosed, non-ventilated				
Protection level	IP65 for body, shaft sealing IP54				
Environmental conditions for operation	Temperature	-20°C ~ 40°C (Non-freezing)			
	Humidity	Below 90% RH (Non-condensing)			
	Ambient environment	Away from active gas, combustible gas, oil drops and dust			
	Altitude	Maximum altitude 4000m, Rated power at 1000m or below, Above 1000m: Decreasing 1.5% per 100m rise			

Note: □=A: no brake □=C: Standard connector
□=B: brake □=D: Intercontec connector

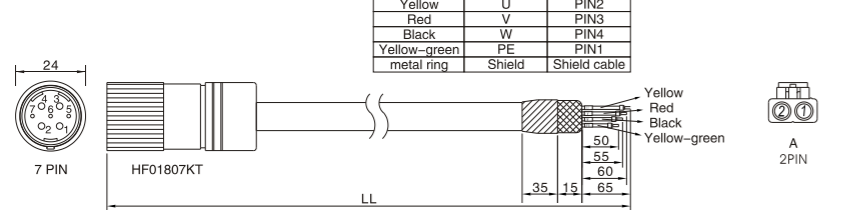
Wiring Diagram for The Power Cable

MOT-005-LL-KL
Wire spec. U120328 4C x 18AWG(41/0.16T) black



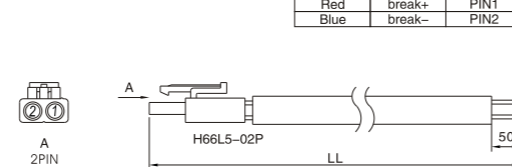
MOT-005-LL-KL		
Cable Color	Signal	PIN #
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-green	PE	PIN4

MOT-005-LL-KC0
Wire spec. 4C x 18AWG(41/0.16T)



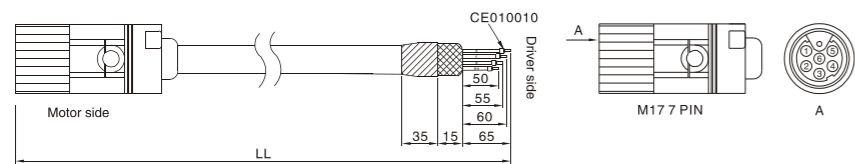
MOT-005-LL-KC0		
Cable color	Signal	Pin#
Yellow	U	PIN2
Red	V	PIN3
Black	W	PIN4
Yellow-green	PE	PIN1
metal ring	Shield	Shield cable

BRA-LL-KL
Wire spec. 2 x 20AWG



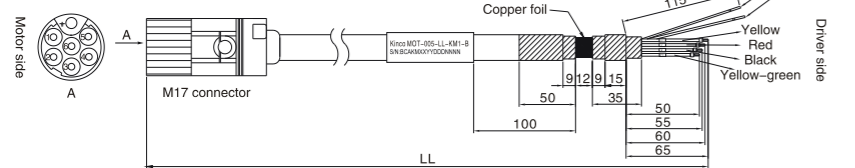
BRA-LL-KL		
Cable color	Signal	Pin#
Red	break+	PIN1
Blue	break-	PIN2

MOT-005-LL-KM1
Wire spec. U120328 4C x 18AWG(41/0.16T) black



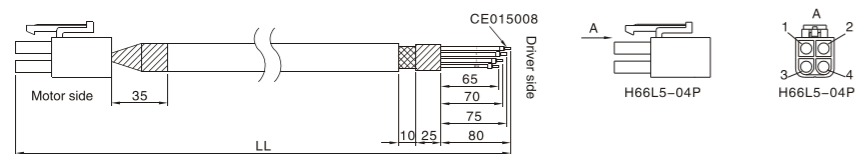
MOT-005-LL-KM1		
Cable Color	Signal	PIN #
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-green	PE	⊥

MOT-005-LL-KM1-B
Wire spec. RVVYP 4 x 18AWG+2 x 20AWG



MOT-005-LL-KM1-B		
Cable Color	Signal	M17 7PIN
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-green	PE	⊥
Shield terminal	shield	metal ring
Red(thin)	brake+	PIN4
Blue(thin)	brake-	PIN5

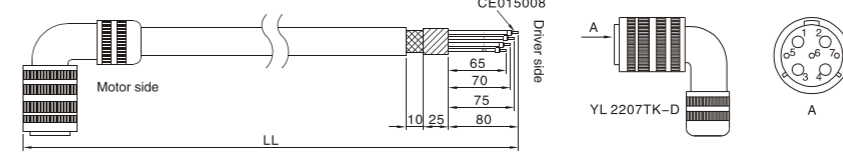
MOT-008-LL-KL
Wire spec. cable 4C x 1.5mm²



MOT-008-LL-KL		
Cable Color	Signal	PIN #
1	U	PIN1
2	V	PIN2
3	W	PIN3
Yellow-green	PE	PIN4

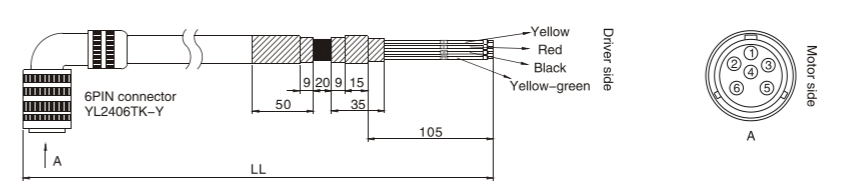
Wiring Diagram for The Power Cable

MOT-008-LL-KC1
Wire spec. cable 4C x 1.5mm²



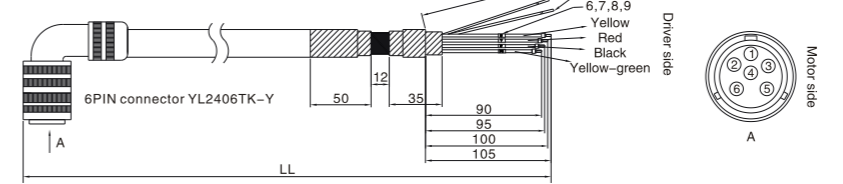
MOT-008-LL-KC1		
Cable Color	Signal	PIN #
1	U	PIN2
2	V	PIN3
3	W	PIN4
Yellow-green	PE	PIN1

MOT-008-LL-KC2
Power cable O-2395 4C x 1.5mm²(30/0.25B)



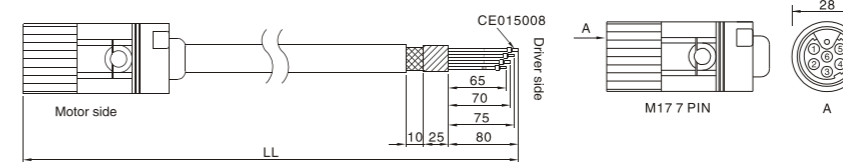
MOT-008-LL-KC2		
Cable Color	Signal	YL2406TK-Y
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-green	PE	PIN4

MOT-008-LL-KC2-B
Wire spec. ECHU RVVYP 4 x 1.5+2 x 0.5



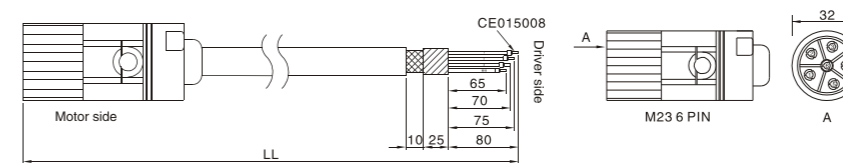
MOT-008-LL-KC2-B		
Cable Color	Signal	YL2406TK-Y
Yellow	U	PIN1
Red	V	PIN2
Black	W	PIN3
Yellow-green	PE	PIN4
Red(thin)	brake+	PIN5
Blue(thin)	brake-	PIN6
Shield terminal	Shield	metal ring

MOT-008-LL-KM1
Wire spec. cable 4C x 1.5mm²



MOT-008-LL-KM1		
Cable Color	Signal	PIN #
1	U	PIN1
2	V	PIN2
3	W	PIN3
Yellow-green	PE	⊥

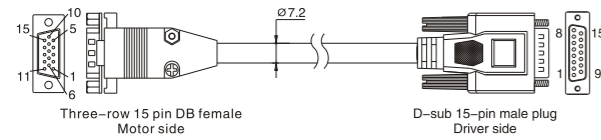
MOT-008-LL-KM2
Wire spec. cable 4C x 1.5mm²



MOT-008-LL-KM2		
Cable Color	Signal	PIN #
1	U	PIN1
2	V	PIN2
3	W	PIN4
Yellow-green	PE	PIN3

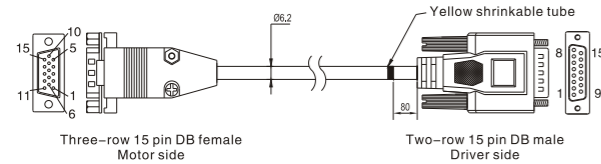
Wiring Diagram for The Encoder Cable

ENCCA-LL-KH
Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)



ENCCA-LL-KH				
Three-row 15 pin DB	Two-row 15 pin DB	Signal	External wire color	Motor wire color
PIN1	PIN1	+5V	Red(thick)	Red
PIN8	PIN2	A	Orange	Blue-black
PIN7	PIN3	B	Yellow	Green
PIN6	PIN4	Z	Green	Yellow
PIN4	PIN5	U	Brown	Brown-black
PIN10	PIN6	V	Purple	White-black
PIN9	PIN7	W	Blue	Gray-black
PIN2	PIN9	GND	Black(thick)	Black
PIN13	PIN10	/A	Orange-white	Blue
PIN12	PIN11	/B	Yellow-white	Green-black
PIN11	PIN12	/Z	Green-white	Yellow-black
PIN5	PIN13	/U	Brown-white	Brown
PIN15	PIN14	/V	Purple-white	White
PIN14	PIN15	/W	Blue-white	Gray
PIN3 empty	PIN8 empty			
Metal shell	DB metal shell	Shield	Shield	Metal shell

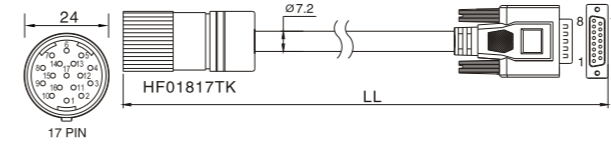
ENCCF-LL-FH
Wire spec. 1P x 24AWG(7/0.20T)+3P x 28AWG(7/0.127T)



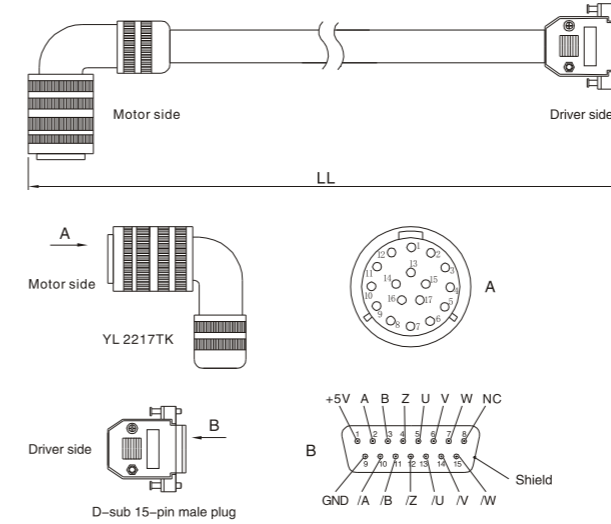
ENCCF-LL-FH				
Three-row 15 pin DB	Two-row 15 pin DB	Signal	Wire color	Motor wire color
PIN1	PIN1	+5V	Red(thick)	Red
PIN8	PIN2	A	Brown	Blue-black
PIN7	PIN3	B	Yellow	Green
PIN6	PIN4	Z	Green	Yellow
PIN2	PIN9	GND	Black(thick)	Black
PIN13	PIN10	/A	Brown-white	Blue
PIN12	PIN11	/B	Yellow-white	Green-black
PIN11	PIN12	/Z	Green-white	Yellow-black
Other pins empty	Other pins empty			
Shell	Shell	Shield	Shield	Shield

Wiring Diagram for The Encoder Cable

ENCCA-LL-KC0
Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)

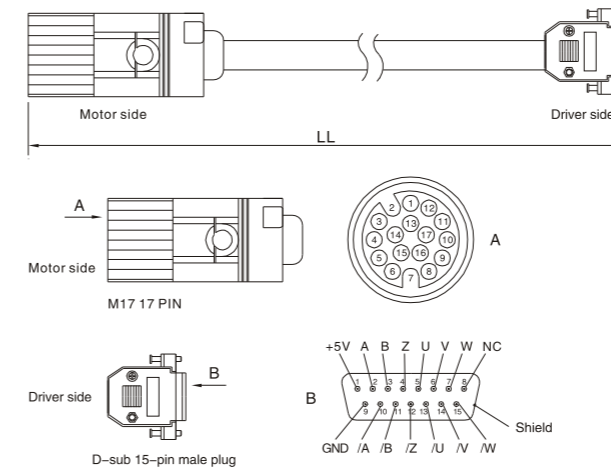


ENCCA-LL-KC1
Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)



ENCCA-LL-KC0/ENCCA-LL-KC1				
17PIN	15PIN DB	Signal	External wire colour	Motor wire colour
PIN1	PIN1	+5V	Red(thick)	Red
PIN3	PIN2	A	Orange	Blue
PIN5	PIN3	B	Yellow	Green
PIN14	PIN4	Z	Green	Yellow
PIN9	PIN5	U	Brown	Brown
PIN11	PIN6	V	Purple	Gray
PIN16	PIN7	W	Blue	White
PIN2	PIN9	GND	Black(thick)	Black
PIN4	PIN10	/A	Orange-white	Blue-black
PIN6	PIN11	/B	Yellow-white	Green-black
PIN15	PIN12	/Z	Green-white	Yellow-black
PIN10	PIN13	/U	Brown-white	Brown-black
PIN12	PIN14	/V	Purple-white	Gray-black
PIN17	PIN15	/W	Blue-white	White-black
Internal metal ring	DB metal shell	Shield	Shield	Shield

ENCCA-LL-KM1
Wire spec. 1P x 24AWG(7/0.20T)+7P x 28AWG(7/0.127T)



ENCCA-LL-KM1				
17PIN	15PIN DB	Signal	External wire colour	Motor wire colour
PIN1	PIN1	+5V	Red(thick)	Red
PIN3	PIN2	A	Orange	Blue
PIN5	PIN3	B	Yellow	Green
PIN14	PIN4	Z	Green	Yellow
PIN9	PIN5	U	Brown	Brown
PIN11	PIN6	V	Purple	Gray
PIN16	PIN7	W	Blue	White
PIN2	PIN9	GND	Black(thick)	Black
PIN4	PIN10	/A	Orange-white	Blue-black
PIN6	PIN11	/B	Yellow-white	Green-black
PIN15	PIN12	/Z	Green-white	Yellow-black
PIN10	PIN13	/U	Brown-white	Brown-black
PIN12	PIN14	/V	Purple-white	Gray-black
PIN17	PIN15	/W	Blue-white	White-black
Internal metal ring	DB metal shell	Shield	Shield	Shield