

Product Manual

Corporate Culture

VISION

KND endeavors to become a first-class CNC equipment supplier in China and even in the world.

MISSION

To realize the dreams of customers and staff in CNC industry

CORE VALUE

Honest, modesty and consistency

TENET

To develop KND and prosper CNC industry in China

CORE IDEA

To create value for customers, and to keep competitive are survival doctrines of KND;
To solve problems modestly, practically and effectively;
To respect staff and keep people-oriented.

GOAL

To provide customers with products of high technology and reliability, and other quality services.



Corporate Profile

Beijing KND CNC Technique Co. Ltd. (KND) was founded in 1993, is a modern, hi-tech enterprise integrating development, production and sales & service of CNC systems and industrial automation products. Its products basically cover controls for various CNC lathes, milling machines, and machining centers in machine tool and other machinery industry. KND has researched and developed dozens types of products, meeting demand for single-axis machines, CNC lathes , milling machines, and machining centers in sector of machine tool, and providing enough options to different users. At present, KND has gradually set up subsidiaries, representative offices and service centers at different places all over China; established special service lines to provide technical support and service to users, and has set up good cooperation with machine builders to serve the customers in an excellent, efficient and rapid way. During development, KND' s capacity and advantages in independent innovation receives numerous approvals from customers. KND provides adequate and systematic service to lots of domestic machine tool manufacturers, and establishes long-term and friendly cooperation with them. Since KND was set up,it has always upheld enterprise spirit of “to solve problems in modesty, pragmatic, honest and efficient way” ,and focused on research and development of CNC technology. Design methods and production technology get promoted and consummated gradually. With its competitiveness in term of technology, quality, price and service, KND has achieved a sound development such that it launches new product(s) every year, and recently it has grown into a leading make in CNC industry in China, and has presented strong and sustainable increasing trend in such aspects as market share and market performance, etc. Under the support of new and old customers, “KND CNC system” has grown into a well-known brand in China, and won customers’ trust and approval. We believe that “to provide customers with products of high technology and reliability, and other quality services” is the optimum way for returning customers. Staff of KND will go on creating values for customers with honestly, modesty and consistent attitude and actions.



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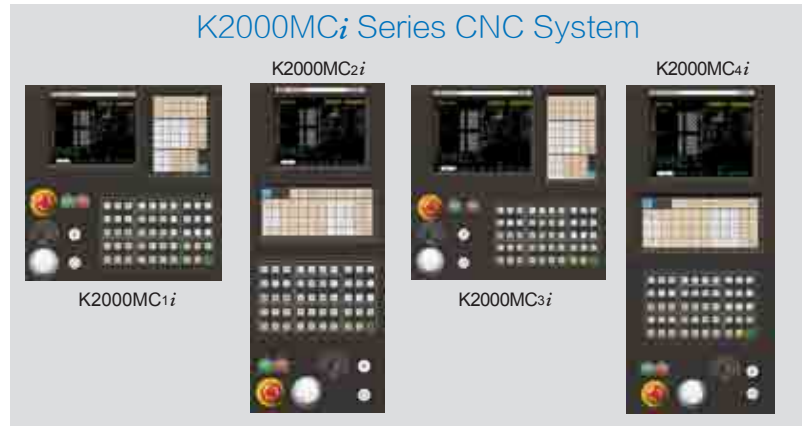
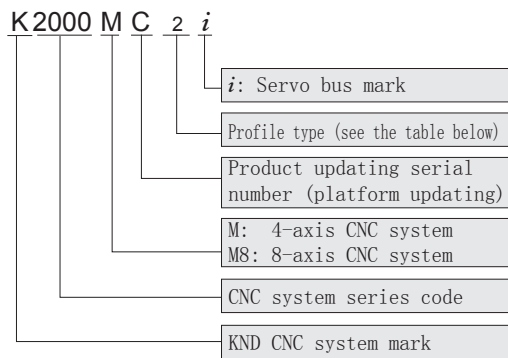
(400 hotline & service centers)	47
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K2000MCi SERIES CNC SYSTEMS FOR MILLING MACHINE & MACHINING CENTER

Product Brief

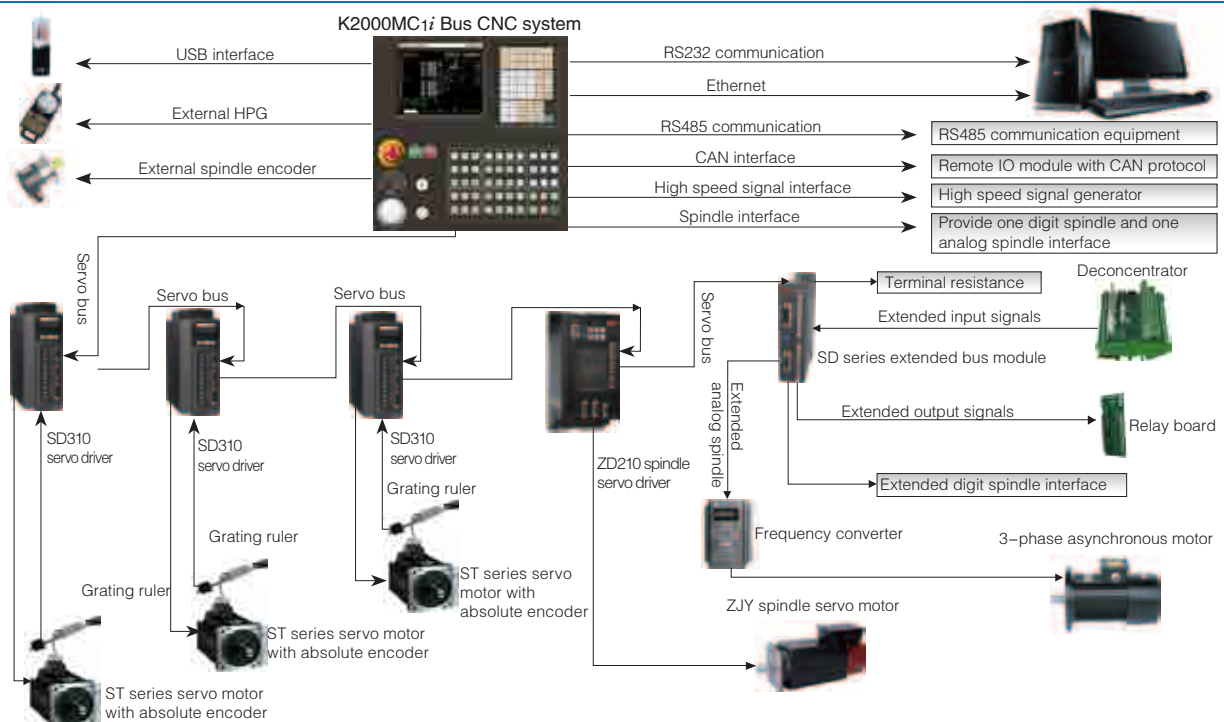
K2000MCi series systems developed by KND company is a new generation bus controlled CNC system for high-grade machining center. It adopts 8.4/10.4 inch LCD screen with horizontal/vertical structure and has 4 profiles totally. System communicates with servo unit in real time through KND serial servo bus (KSSB), which can control feed axes, analog spindle, digit spindle, I/O modules and etc. Match with servo drivers and motors with high resolution absolute encoder to realize position accuracy up to 0.1 μm and satisfy high precision requirements of machining center.

Model Description



Model	LCD screen		System panel	
	Type	Dimension	Button	Dimension
K2000MC1i—Horizontal	TFT	8.4 inch	Film button	400 × 200
K2000MC2i—Vertical	TFT	8.4 inch	Film button	260 × 320
K2000MC3i—Horizontal	TFT	10.4 inch	Film button	430 × 230
K2000MC4i—Vertical	TFT	10.4 inch	Film button	310 × 365

System Composition



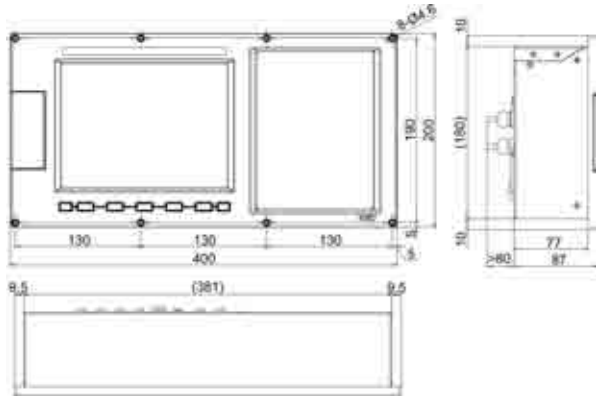
List of Specification

Project	Specification	
	K2000M8Ci	K2000MCi
Size	C1: 400 × 200, C2: 260 × 320, C3: 430 × 230, C4: 310 × 365	
LCD screen	8.4/10.4 inch with resolution of 640 × 480	
Control mode	KND Serial Servo Bus (KSSB)	
Max. controlled xes	8 axes	4 axes
Max. imultaneous xes	8 axes	4 axes
Max. PLC axes	8 axes	5 axes
Axis control function	Axes type: linear axis , A/B/C/D type rotation axis	
	Synchronous axis function , Axis interlock, Emergency stop , Software and hardware over-travel limit	
Preparation function	Up to 80 G instructions, including rapid positioning, linear interpolation, circular interpolation, helix interpolation, space three points circular interpolation, digital spindle thread interpolation, polar coordinate interpolation, cylindrical interpolation, imaginary axis interpolation, Cartesian coordinate setting, plane selection, polar coordinate instructions, scaling, coordinate rotation, reference point return, work coordinate system, local coordinate system, tool measurement, tool compensation, canned cycle instructions of drilling/boring/tapping, dwell etc.	
Interpolation function	G00~G03、G07.2、G78.1、G02.1、G02.2~02.5、G03.2~03.5、G12.1、G13.1、G07.1、G07	
Feed function	Maximum rapid traverse speed: 240000mm/min	
	Maximum feedrate speed: 60000mm/min	
	Rapid override: F0、25%、50%、100%	
	Feedrate override: 0 ~ 150% (16 gears)	
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control, Prefetch of multiple blocks, Automatic acceleration & deceleration across multiple blocks, Corner control , Circular control , etc.	
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)	
Coordinate system and dimension	Least input increment: 0.001/0.0001mm	
	Max stroke : ± 999999999 × Least input increment	
	Machine coordinate positioning (G53), Work coordinate system (G50, G54~G59), Local coordinate system (G52)	
	Cartesian coordinate system(G54.9), Plane selection (G17, G18, G19), Slant plane setting	
	Absolute/incremental programming (G90/G91), Metric/inch programming (G21/G20)	
Measurement function	Polar coordinate instructions (G15/G16), Scaling (G50/G51), Coordinate rotation (G68.1/G69.1)	
	Skip function (G31), Automatic tool measurement function (G36/G37)	
Spindle function	KSSB controlled spindle : 1, Analog spindle: 1,Digital spindle: 1	
	Multiple spindle function: Analog spindle can be extended	
	Gear control(S01 ~ S08), Analog control(S0~S99999)	
	Analog spindle auto/manual shift gears, Digital spindle positioning	
	Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless)	
	One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set.	
	Rigid tapping cycle(G84)	
Tool function	Tool offset number : 256 groups	
	Tool change function : Automatically change a tool by the built-in PLC	
	Tool presetting: Rectangular tool presetting, three points centering tool presetting, etc.	
Auxiliary function	Standard M codes : 59 , which can be customized	

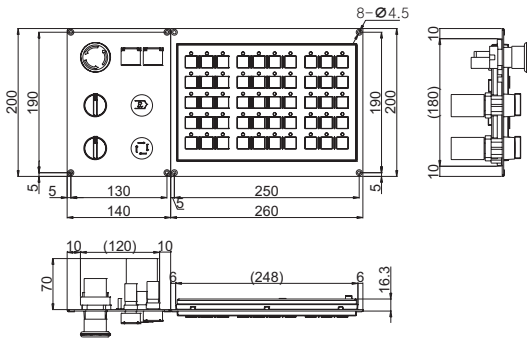
Project	Specification	
	K2000M8Ci	K2000MCi
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3	
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming	
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs on U-disk	
	Program remarks : Chinese and English IME	
	Editing and executing multiple blocks in MDI mode	
	Sub-program calling(63 layers nested at most), Sub-program calling when machining in DNC mode with a U-disk	
Program check	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.	
Program restart	Breakpoint management, Power-off management, Restart at any position.	
Simplified programming	Canned drilling cycle(G73, G76, G80 ~ G89)	
	Tapping cycle(G93, G84, G74)	
	Chamfering and rounding programming, linear-angle programming	
Compensation function	Tool length compensation (G43, G44, G49), Tool radius compensation (G40-G42), Tool length wear compensation , Tool radius wear compensation	
	Corner circular interpolation (G39), Compensation value can be input by G10 in a program	
	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm	
	Pitch-error compensation: Provide 512 compensation points for each axis, range: $\pm 0.1\text{mm}$	
Macro program function	Custom macro B, Macro program calling(G65), Customized subprogram calling using G/M/T codes, Interruption calling of macro	
Human-machine interface(HMI)	Language : Chinese and English	
	Graphics: 2D graphics of tool path, 3D graphics of parts	
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Ladder diagram, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, Tool No., Spindle gear, Screen saver, etc.	
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.	
	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm(only for KSSB controlled systems), External alarm, etc.	
Protection function	Hardware over-travel limit, Stored stroke limit(software over-travel limit), Dynamic workspace, Axis interlocking, Safety door interlock, Parameter protection, Program edition protection, Program encryption, PLC parameter protect, PLC Program encryption, etc.	
	CNC parameter backup, PLC parameter backup, Tool offset data backup, Program backup, PLC program backup, Macro variables backup, Access electronic disk, System data backup(U disk operation), System data restore(U disk operation), etc.	
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)	
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run , Single block run , Auto handle run	
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection	
PLC function	Open style PLC, display and edit ladder diagram on CNC, PLC-axis control	
	DI: 20 points, DI/DO point number of KSSB remote I/O module SD1 : 32/32	
	DI/DO point number can be extended up to 512/512 with KSSB controlled remote I/O module.	
External interface	KSSB interface (only for bus controlled system), Spindle encoder interface , Feed axes pulse interface(only for non-bus controlled system), Analog/digital spindle interface , High-speed input interface(only for bus controlled system)	
	Machine operation panel interface , Additional panel interface , Separate operation box interface	
	RS232/485 interface , CAN interface , USB interface , Ethernet interface	
Matched driver	SD310 AC servo driver	
	ZD210 spindle driver	

System Shape and Installation Dimension

▼ K2000MC1i Horizontal CNC system

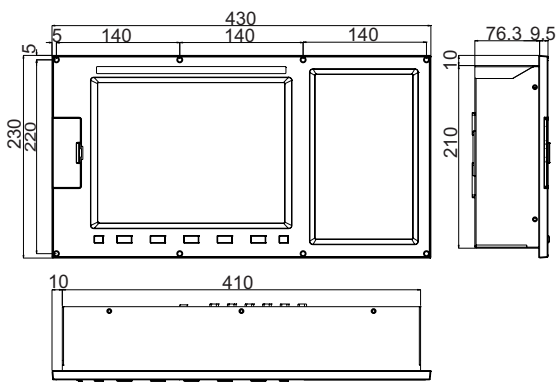


K2000MC1i Installation dimension

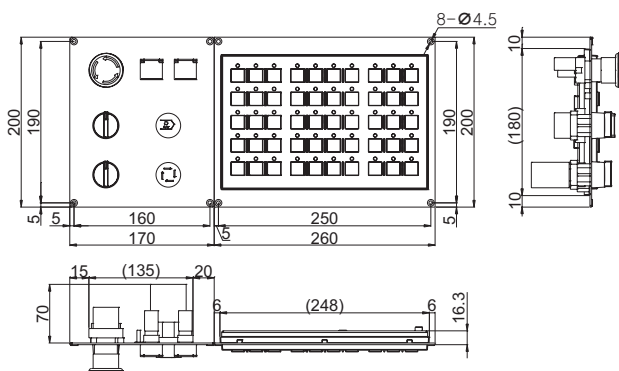


Additional operation panel installation dimension

▼ K2000MC3i Horizontal CNC system

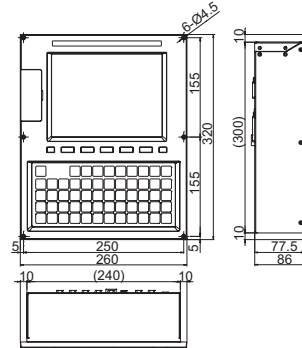


K2000MC3i Installation dimension

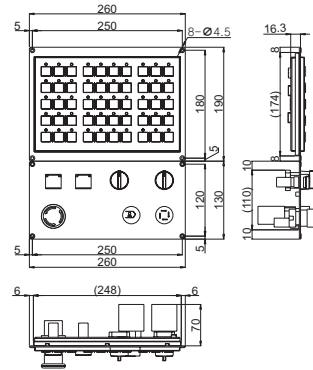


Additional operation panel installation dimension

▼ K2000MC2i Vertical CNC system

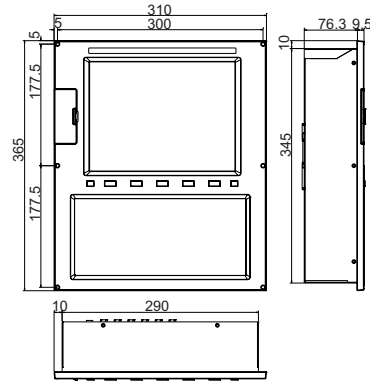


K2000MC2i Installation dimension

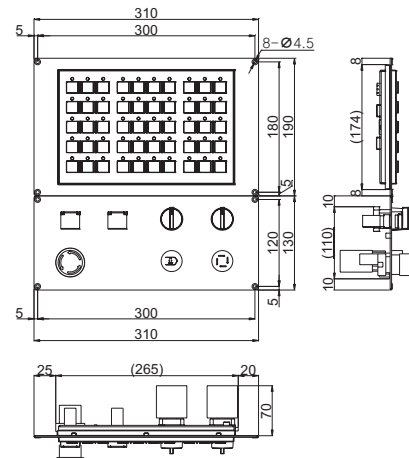


Additional operation panel installation dimension

▼ K2000MC4i Vertical CNC system



K2000MC4i Installation dimension



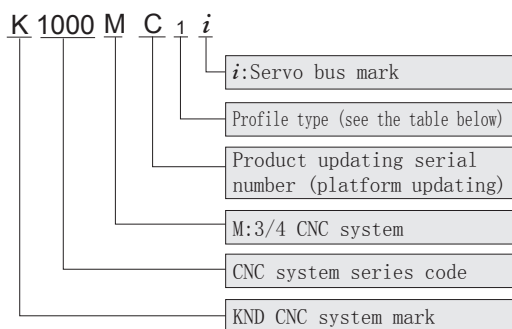
Additional operation panel installation dimension

K1000MCi CNC SYSTEM FOR MILLING MACHINE & MACHINING CENTER

Product Brief

K1000MCi is a middle grade CNC system developed by Beijing KND company, which succeeds excellent traditions of stability and reliability from previous K1000M system. New added KND serial servo bus controlled drivers matched with servo motors with absolute encoder can promote machining precision obviously. All series of CNC systems provide 3~4 axes, which is suitable for all kinds of boring & milling machine, vertical machining center, horizontal machining center or other 3~4 axes mechanism equipments. Open type PLC with perfect PLC program magazine is convenient to users to perform special control function.

Model Description



Profile type				
Model	LCD screen		System panel	
	Type	Dimension	Type	Dimension
K1000M-Ci—Horizontal	TFT	8 inch	Film button	400 × 245
K1000MC1i—Horizontal	TFT	8 inch	Film button	400 × 200
K1000MC2i—Vertical	TFT	8 inch	Film button	260 × 320

List of Specification

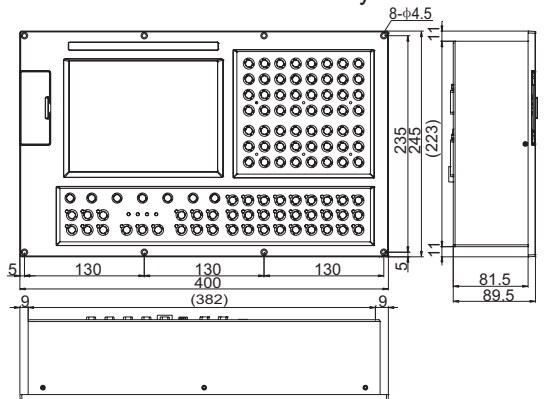
Project	Specification		
	K1000M-Ci	K1000MC1i	K1000MC2i
Size	400 × 245	400 × 200	260 × 320
LCD screen	8 inch with resolution of 800 × 600		
Control mode	KND Serial Servo Bus (KSSB)		
Max. controlled axes	4 axes		
Max. simultaneous axes	4 axes		
Max. PLC axes	5 axes		
Axis control function	Axes type: linear axis , A/B/C/D type rotation axis		
	Synchronous axis function , Axis interlock, Emergency stop , Software and hardware over-travel limit		
Preparation function	Up to 60 G codes, including rapid positioning, linear interpolation, circular interpolation, helix interpolation, thread cutting and interpolation, plane selection, reference point return, work coordinate system, local coordinate system, tool measurement, tool compensation, canned cycle instructions of drilling/boring/tapping, dwell, etc.		
Interpolation function	G00、G01、G02、G03、G07.2、G78.1		
Feed function	Maximum rapid traverse speed: 60000mm/min, Maximum feedrate speed: 30000mm/min		
	Rapid override: F0、25%、50%、100%		
	Feedrate override: 0 ~ 150% (16 gears)		
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control, Prefetch of multiple blocks, Automatic acceleration & deceleration across multiple blocks, Corner control , Circular control , etc.		
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)		

Project	Specification		
	K1000M-Ci	K1000MC1i	K1000MC2i
Coordinate system and dimension	Least input increment: 0.001mm		
	Max stroke : $\pm 999999999 \times$ Least input increment		
	Machine coordinate positioning (G53), Work coordinate system (G50, G54~G59), Local coordinate system (G52)		
	Plane selection (G17, G18, G19)		
Measurement function	Absolute/incremental programming (G90/G91), Metric/inch programming (G21/G20)		
	Skip function (G31)		
Spindle function	Automatic tool measurement function (G36/G37)		
	KSSB controlled spindle : 1, Analog spindle: 1, Digital spindle: 1		
	Multiple spindle function: Analog spindle can be extended		
	Gear control(S01 ~ S08), Analog control(S0~S99999)		
	Analog spindle auto/manual shift gears, Digital spindle positioning		
	Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless)		
	One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set.		
Tool function	Rigid tapping cycle(G84)		
	Tool offset number : 128 groups		
	Tool change function : Automatically change a tool by the built-in PLC		
Auxiliary function	Tool presetting: Rectangular tool presetting, three points centering tool presetting, etc.		
	Standard M codes : 59 , which can be customized		
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3		
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming		
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs on U-disk		
	Program remarks : Chinese and English IME		
	Editing and executing multiple blocks in MDI mode		
Program check	Sub-program calling(63 layers nested at most), Sub-program calling when machining in DNC mode with a U-disk		
Program restart	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.		
Simplified programming	Breakpoint management, Power-off management, Restart at any position.		
	Canned drilling cycle(G73, G76, G80 ~ G89)		
	Tapping cycle(G93, G84, G74)		
Compensation function	Chamfering and rounding programming, linear-angle programming		
	Tool length compensation (G43, G44, G49), Tool radius compensation (G40~G42), Tool length wear compensation , Tool radius wear compensation		
	Corner circular interpolation (G39), Compensation value can be input by G10 in a program		
	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm		
Macro program function	Pitch-error compensation: Provide 512 compensation points for each axis, range: ± 0.1 mm		
	Custom macro B, Macro program calling(G65), Customized subprogram calling using G/M/T codes, Interruption calling of macro		
Human-machine interface(HMI)	Language : Chinese and English		
	Graphics: 2D graphics of tool path, 3D graphics of parts		
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Ladder diagram, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, Tool No., Spindle gear, Screen saver, etc.		
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.		
Protection function	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm(only for KSSB controlled systems), External alarm, etc.		
	Hardware over-travel limit, Stored stroke limit(software over-travel limit), Dynamic workspace, Axis interlocking, Safety door interlock, Parameter protection, Program edition protection, Program encryption, PLC parameter protect, PLC Program encryption, etc. CNC parameter backup, PLC parameter backup, Tool offset data backup, Program backup, PLC program backup, Macro variables backup, Access electronic disk, System data backup(U disk operation), System data restore(U disk operation), etc.		

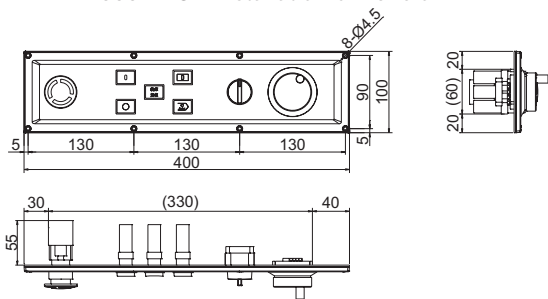
Project	Specification		
	K1000M-Ci	K1000MC1i	K1000MC2i
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)		
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run , Single block run , Auto handle run		
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection		
PLC function	Open style PLC, display and edit ladder diagram on CNC, PLC-axis control, Simple PLC-axis control		
	DI: 20 points, DI/DO point number of KSSB remote I/O module SD1 : 32/32		
External interface	DI/DO point number can be extended up to 512/512 with KSSB controlled remote I/O module.		
	KSSB interface (only for bus controlled system), Spindle encoder interface , Feed axes pulse interface(only for non-bus controlled system), Analog/digital spindle interface , High-speed input interface(only for bus controlled system)		
	Machine operation panel interface , Additional panel interface , Separate operation box interface		
Matched driver	RS232/485 interface , CAN interface , USB interface , Ethernet interface		
	SD310 AC servo driver, ZD210 spindle driver		

System Shape and Installation Dimension

▼ K1000M-Ci Horizontal CNC system

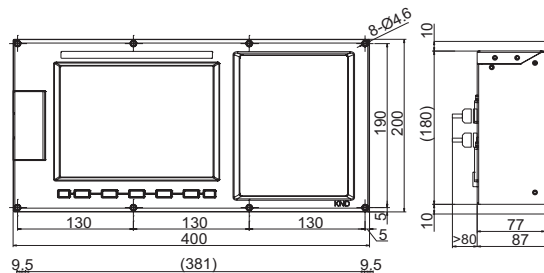


K1000M-Ci Installation dimension

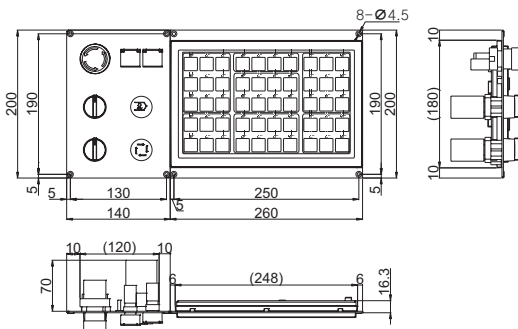


Additional operation panel installation dimension

▼ K1000MC1i Horizontal CNC system

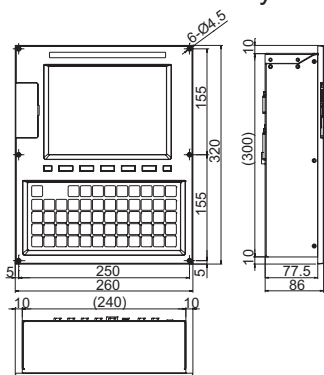


K1000MC1i Installation dimension

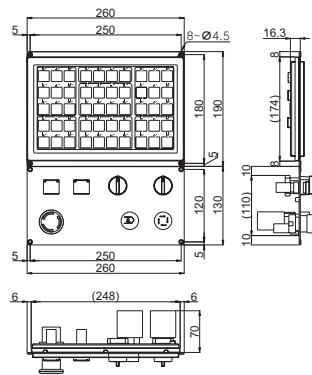


Additional operation panel installation dimension

▼ K1000MC2i Vertical CNC system



K1000MC2i Installation dimension



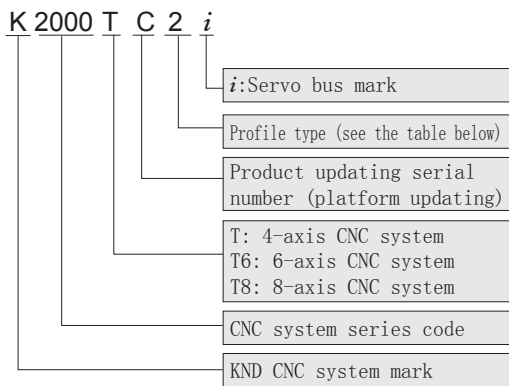
Additional operation panel installation dimension

K2000TC_i CNC SYSTEM FOR LATHE MACHINE

Product Brief

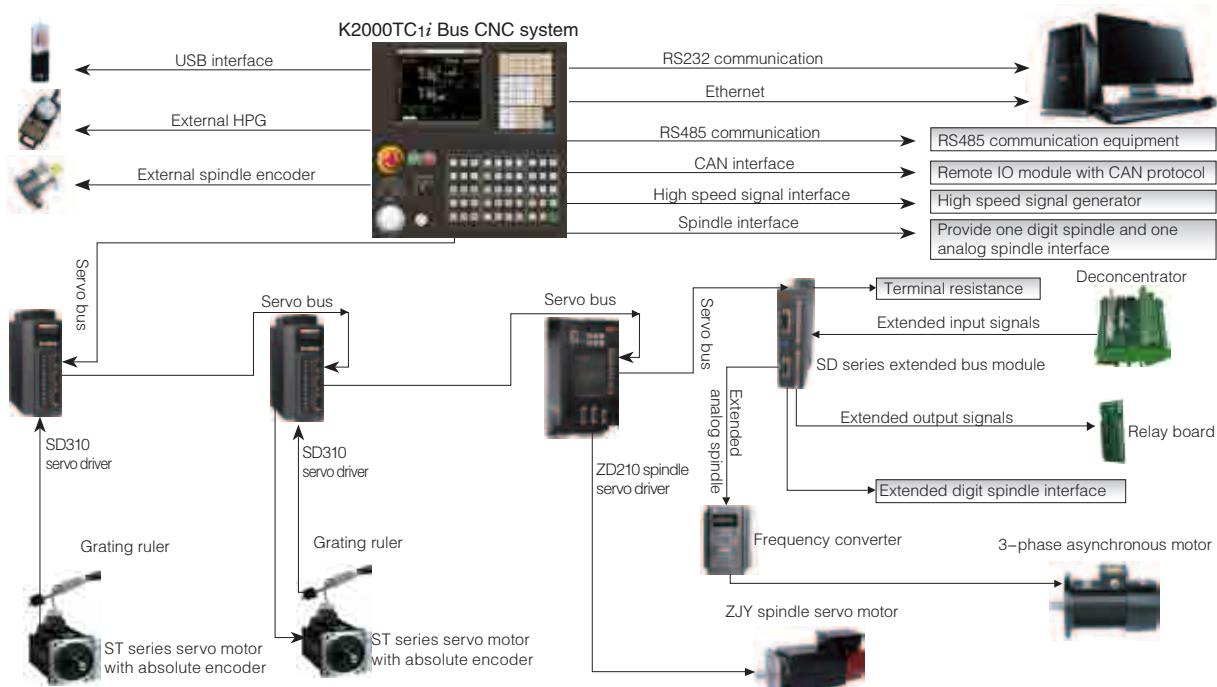
K2000TC_i system developed by KND company is a new generation bus controlled CNC system for high-grade machining center. It adopts 8.4/10.4 inch LCD screen with horizontal/vertical structure and has 4 profiles totally. System communicates with servo unit in real time through KND serial servo bus (KSSB), which can control feed axes, analog spindle, digit spindle, I/O modules and etc. Matched servo drivers and motors with high resolution absolute encoder can realize position accuracy up to 0.1 μm and satisfy high precision requirements of turning and machining composite machine tool.

Model Description



Profile type				
Model	LCD screen		System panel	
	Type	Dimension	Button	Dimension
K2000TC _{1i} —Horizontal	TFT	8.4 inch	Film button	400 × 200
K2000TC _{2i} —Vertical	TFT	8.4 inch	Film button	260 × 320
K2000TC _{3i} —Horizontal	TFT	10.4 inch	Film button	430 × 230
K2000TC _{4i} —Vertical	TFT	10.4 inch	Film button	310 × 365

System Composition



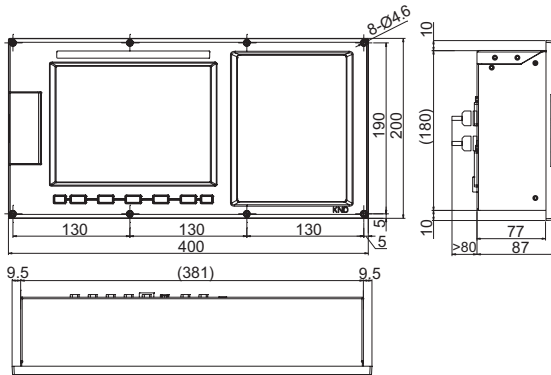
List of Specification

Project	Specification		
	K2000T8Ci	K2000T6Ci	K2000TCi
Size	C1: 400×200, C2: 260×320, C3: 430×230, C4: 310×365		
LCD screen	8.4/10.4 inch with resolution of 640×480		
Control mode	KND Serial Servo Bus (KSSB)		
Max. controlled axes	8 axes	6 axes	4 axes
Max. simultaneous axes	8 axes	6 axes	4 axes
Cs axes	8 axes	6 axes	4 axes
Max. PLC axes	8 axes	7 axes	5 axes
Axis control function	Axes type: linear axis , A/B/C/D type rotation axis Synchronous axis function , Axis interlock, Emergency stop , Software and hardware over-travel limit		
Preparation function	G code system: A/B Up to 93 G codes, including rapid positioning, linear interpolation, circular interpolation, helix interpolation, space three points circular interpolation, thread cutting and interpolation, polar coordinate interpolation, cylindrical interpolation, imaginary axis interpolation, Cartesian coordinate axis setting, plane selection, polar coordinate instructions, scaling, coordinate rotation, diameter & radius programming selection, reference point return, work coordinate system, local coordinate system, tool measurement, tool compensation, single canned cycle instructions, multiple canned cycle instructions, dwell, etc.		
Interpolation function	G00~G03、G32、G34、G07.2、G78.1、G02.1、G02.2~5、G03.2~5、G12.1、G13.1、G07.1、G07		
Feed function	Rapid positioning (G00) , Cutting feed (G01) , Feed per minute (G98) , Feed per revolution (G99) , dwell (G04) Maximum rapid traverse speed: 24000mm/min, Maximum feedrate speed: 60000mm/min Rapid override: F0、25%、50%、100%, Feedrate override: 0 ~ 150% (16 gears)		
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control		
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)		
Thread function	Pitch: 0.01~500mm (Metric) ; 0.06~25400teeth/inch (Inch) Single/multiple thread, Metric/inch thread, Straight/tapper/face thread, Constant pitch/variable pitch thread, Circular thread Thread retracting length, angle and speed can be specified, Digit spindle thread		
Coordinate system and dimension	Least input increment: 0.001/0.0001mm, Max stroke : ± 999999999 × Least input increment Machine coordinate positioning (G53), Work coordinate system (G50, G54~G59), Local coordinate system (G52) Cartesian coordinate system(G54.9), Plane selection (G17, G18, G19), Slant plane setting Diameter/radius programming (G10.9) Absolute/incremental programming (G90/G91), Metric/inch programming (G21/G20) Polar coordinate instructions (G15/G16), Scaling (G50/G51), Coordinate rotation (G68.1/G69.1)		
Measurement function	Skip function (G31) , Automatic tool measurement function (G36、G37)		
Spindle function	KSSB controlled spindle : 1, Analog spindle: 1, Digital spindle: 1 Multiple spindle function: Analog spindle can be extended Gear control(S01 ~ S08), Analog control(S0~S99999), Cs axis control Analog spindle auto/manual shift gears, Digital spindle positioning, Support digit spindle “speed/position” shift Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless) One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set. Chuck check when spindle is running, Tailstock check, Spindle constant surface speed control (G96/G97) , Rigid tapping, Spindle speed clamp, etc.		
Tool function	Multiple axes tool compensation (2~8 axes) ; Tool offset number:32 groups Tool length compensation, Tool nose radius compensation, Tool wear compensation Tool presetting: absolute tool presetting, incremental tool presetting, tool compensation value adjusting, etc.		

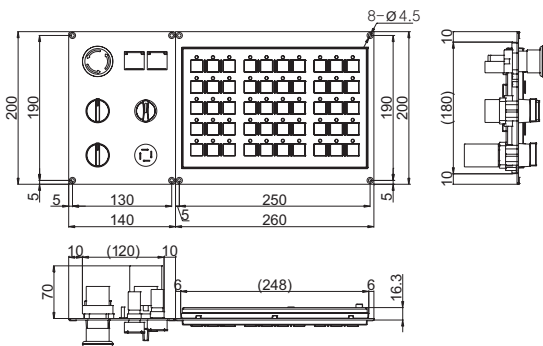
Project	Specification		
	K2000T8Ci	K2000T6Ci	K2000TCi
Auxiliary function	Standard M codes: 50, which can be customized		
	Special M codes: M21~M24, M71~M74, M91~M94		
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3		
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming		
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs on U-disk		
	Program remarks : Chinese and English IME		
	Editing and executing multiple blocks in MDI mode		
	Sub-program calling(63 layers nested at most), Sub-program calling when machining in DNC mode with a U-disk		
Program check	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.		
Program restart	Breakpoint management, Power-off management, Restart at any position.		
Simplified programming	Drilling canned cycle (G83.5、G86.5、G80~G89) , Tapping canned cycle (G93、G84、G84.5)		
	Chamfering and rounding programming, linear-angle programming		
	Mirror image for X axis (G68, G69)		
Compensation function	Tool length compensation, Tool nose radius compensation (G40~G42)		
	Corner circular interpolation (G39), Compensation value can be input by G10 in a program		
	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm		
	Pitch-error compensation: Provide 512 compensation points for each axis, range: ± 0.1 mm		
Macro program function	Custom macro B, Macro program calling(G65), Customized subprogram calling using G/M/T codes, Interruption calling of macro		
Human-machine interface(HMI)	Language : Chinese and English		
	Graphics: 2D graphics of tool path, 3D graphics of parts		
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Ladder diagram, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, Tool No., Spindle gear, Screen saver, etc.		
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.		
	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm(only for KSSB controlled systems), External alarm, etc.		
Protection function	Hardware over-travel limit, Stored stroke limit(software over-travel limit), Dynamic workspace, Axis interlocking, Safety door interlock, Parameter protection, Program edition protection, Program encryption, PLC parameter protect, PLC Program encryption, etc.		
	CNC parameter backup, PLC parameter backup, Tool offset data backup, Program backup, PLC program backup, Macro variables backup, Access electronic disk, System data backup(U disk operation), System data restore(U disk operation), etc.		
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)		
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run , Single block run , Auto handle run		
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection		
PLC function	Open style PLC, display and edit ladder diagram on CNC, PLC-axis control		
	DI: 20 points, DI/DO point number of KSSB remote I/O module SD1 : 32/32		
	DI/DO point number can be extended up to 512/512 with KSSB controlled remote I/O module.		
External interface	KSSB interface (only for bus controlled system), Spindle encoder interface , Feed axes pulse interface(only for non-bus controlled system), Analog/digital spindle interface , High-speed input interface(only for bus controlled system)		
	Machine operation panel interface , Additional panel interface , Separate operation box interface		
	RS232/485 interface , CAN interface , USB interface , Ethernet interface		
Matched driver	SD310 AC servo driver , ZD210 spindle driver		

System Shape and Installation Dimension

▼ K2000TC1i Horizontal CNC system

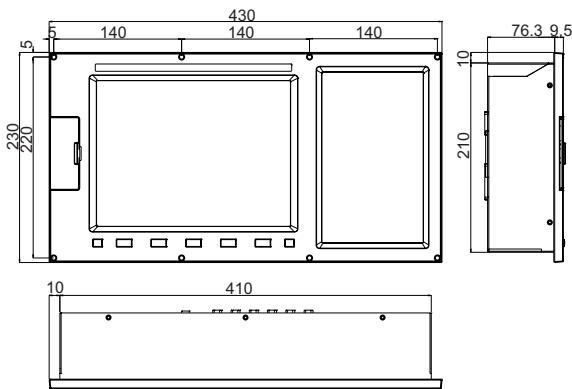


K2000TC1i Installation dimension

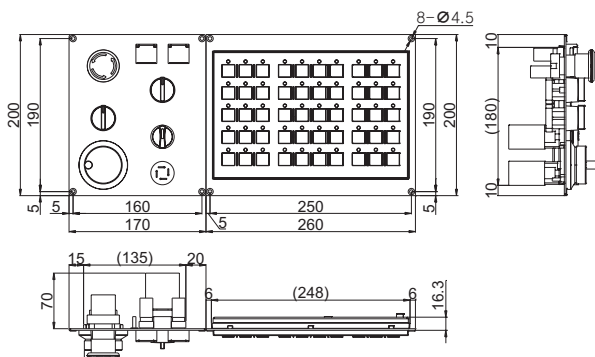


Additional operation panel installation dimension

▼ K2000TC3i Horizontal CNC system

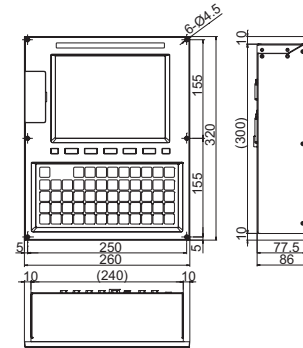


K2000TC3i Installation dimension

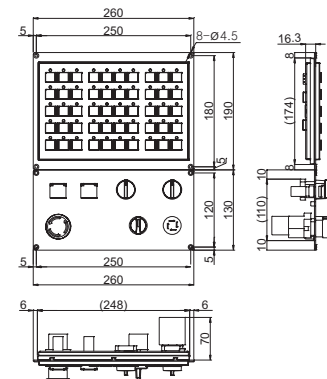


Additional operation panel installation dimension

▼ K2000TC2i Vertical CNC system

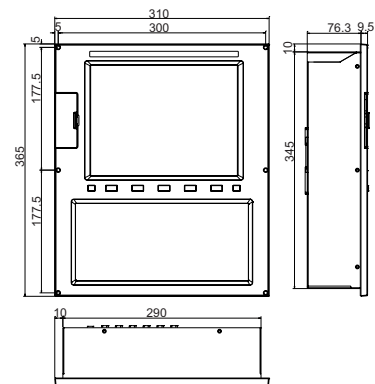


K2000TC2i Installation dimension

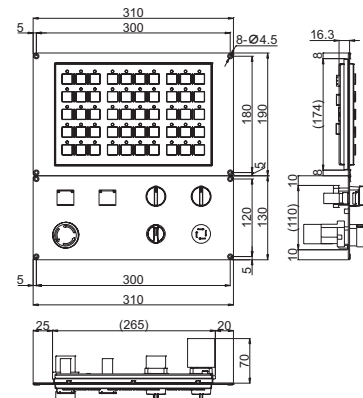


Additional operation panel installation dimension

▼ K2000TC4i Vertical CNC system



K2000TC4i Installation dimension



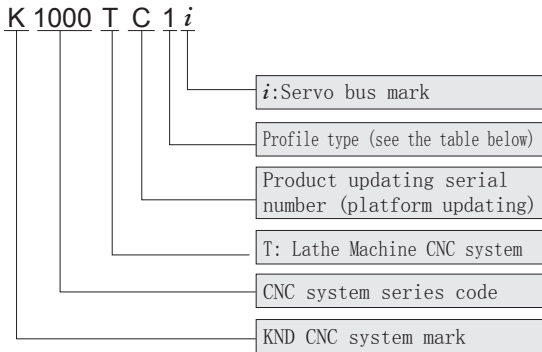
Additional operation panel installation dimension

K1000TC_i CNC SYSTEM FOR LATHE MACHINE

Product Brief

K1000TC_i succeeds excellent traditions of stability and reliability from previous K1000T system. New added KND serial servo bus controlled drivers matched with servo motors with absolute encoder can promote machining precision obviously. 8 inch TFT LCD and three installation structures satisfy different requirements of machine tool with different mechanical structures. Besides two universal feed axes and an analog spindle, it can also control digit spindle and Y axis. Open type PLC with perfect PLC program magazine is convenient to users to perform special control function.

Model Description



Profile type				
Model	LCD screen		System panel	
	Type	Dimension	Button	Dimension
K1000T-C _i —Horizontal	TFT	8 inch	Film button	400 × 245
K1000TC _{1i} —Horizontal	TFT	8 inch	Film button	400 × 200
K1000TC _{2i} —Vertical	TFT	8 inch	Film button	260 × 320

List of Specification

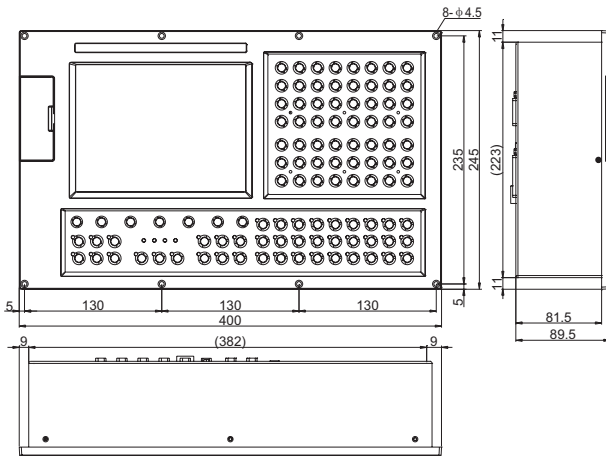
Project	Specification		
	K1000T-C _i	K1000TC _{1i}	K1000TC _{2i}
Size	400 × 245	400 × 200	260 × 320
LCD screen	8 inch; Resolution: 800 × 600		
Control mode	KND Serial Servo Bus (KSSB)		
Axis control function	Max. controlled axes: 4 axes		
	Max. simultaneous axes: 4 axes		
	Cs axes: 4 axes		
	Max. PLC axes: 5 axes		
	Axes type: linear axis , A/B/C/D type rotation axis		
	Synchronous axis function , Axis interlock, Emergency stop , Software and hardware over-travel limit		
Preparation function	G code system: A/B		
	Up to 71 G codes, including rapid positioning, linear interpolation, circular interpolation, helix interpolation, thread cutting and interpolation, polar coordinate interpolation, plane selection, polar coordinate instructions, reference point return, work coordinate system, local coordinate system, tool measurement, tool compensation, single canned cycle instructions, multiple canned cycle instructions, drilling/rigid tapping cycle, dwell, etc.		
Interpolation function	G00、G01、G02、G03、G32、G34、G07.2、G78.1		

Project	Specification		
	K1000T-Ci	K1000TCi	K1000TC2i
Feed function	Maximum rapid traverse speed: 120000mm/min, Maximum feedrate speed: 48000mm/min		
	Rapid override: F0、25%、50%、100% , Feedrate override: 0 ~ 150% (16 gears)		
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control		
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)		
Thread function	Pitch: 0.01~500mm (Metric) ; 0.06~25400teeth/inch (Inch)		
	Single/multiple thread, Metric/inch thread, Straight/tapper/face thread, Constant pitch/variable pitch thread		
	Thread retracting length, angle and speed can be specified		
	Digit spindle thread		
Coordinate system and dimension	Least input increment: 0.001/0.0001mm, Max stroke : $\pm 999999999 \times$ Least input increment		
	Machine coordinate positioning (G53), Work coordinate system (G50, G54~G59), Local coordinate system (G52)		
	Plane selection (G17, G18, G19), Metric/inch programming shift (G21/G20)		
Measurement function	Skip function (G31) , Automatic tool measurement function (G36、G37)		
Spindle function	KSSB controlled spindle : 1, Analog spindle: 1,Digital spindle: 1		
	Multiple spindle function: Analog spindle can be extended		
	Gear control(S01 ~ S08), Analog control(S0~S99999), Cs axis control		
	Analog spindle auto/manual shift gears, Digital spindle positioning, Support digit spindle “speed/position” shift		
	Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless)		
	One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set.		
	Chuck check when spindle is running, Tailstock check, Spindle constant surface speed control (G96/G97) ,Rigid tapping, Spindle speed clamp, etc.		
Tool function	3 axes tool compensation (X/Z/Y) ; Tool offset number:32 groups		
	Tool presetting: absolute tool presetting, incremental tool presetting, tool compensation value adjusting, etc.		
Auxiliary function	Standard M codes: 50, which can be customized		
	Special M codes: M21~M24, M71~M74, M91~M94		
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3		
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming		
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs on U-disk		
	Program remarks : Chinese and English IME		
	Editing and executing multiple blocks in MDI mode		
	Sub-program calling(63 layers nested at most), Sub-program calling when machining in DNC mode with a U-disk		
Program check	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.		
Program restart	Restart a program at any position, etc.		
Simplified programming	Single canned cycle (G90/G92~G94) , Multiple canned cycle (G70~G76)		
	Drilling canned cycle (G83.5、G86.5、G80~G89) , Tapping canned cycle (G93、G84、G84.5)		
	Chamfering and rounding programming, linear-angle programming		
	Mirror image for X axis (G68, G69)		

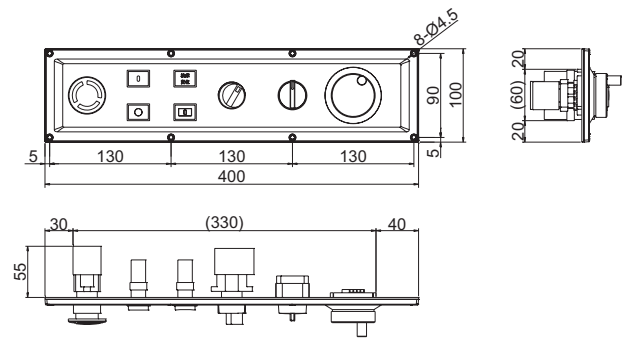
Project	Specification		
	K1000T-C _i	K1000TC _{1i}	K1000TC _{2i}
Compensation function	Tool length compensation, Tool nose radius compensation (G40~G42), Tool wear compensation		
	Corner circular interpolation (G39), Compensation value can be input by G10 in a program		
	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm		
	Pitch-error compensation: Provide 128 compensation points for each axis, range: ± 0.1mm		
Macro program function	Custom macro B, Macro program calling(G65), Customized subprogram calling using G/M/T codes, Interruption calling of macro		
Human-machine interface(HMI)	Language : Chinese and English		
	Graphics: 2D graphics of tool path, 3D graphics of parts		
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Ladder diagram, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, Tool No., Spindle gear, Screen saver, etc.		
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.		
	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm(only for KSSB controlled systems), External alarm, etc.		
Protection function	Hardware over-travel limit, Stored stroke limit(software over-travel limit), Dynamic workspace, Axis interlocking, Safety door interlock, Parameter protection, Program edition protection, Program encryption, PLC parameter protect, PLC Program encryption, etc.		
	CNC parameter backup, PLC parameter backup, Tool offset data backup, Program backup, PLC program backup, Macro variables backup, Access electronic disk, System data backup(U disk operation), System data restore(U disk operation), etc.		
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)		
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run, Single block run, Auto handle run		
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection		
PLC function	Open style PLC, display and edit ladder diagram on CNC, PLC-axis control		
	DI: 20 points, DI/DO point number of KSSB remote I/O module SD1 : 32/32		
	DI/DO point number can be extended up to 512/512 with KSSB controlled remote I/O module.		
External interface	KSSB interface (only for bus controlled system), Spindle encoder interface , Feed axes pulse interface(only for non-bus controlled system), Analog/digital spindle interface , High-speed input interface(only for bus controlled system)		
	Machine operation panel interface , Additional panel interface , Separate operation box interface		
	RS232/485 interface, CAN interface, USB interface , Ethernet interface		
Matched driver	SD310 AC servo driver		
	ZD210 spindle driver		

System Shape and Installation Dimension

▼ K1000T-C_i Horizontal CNC system

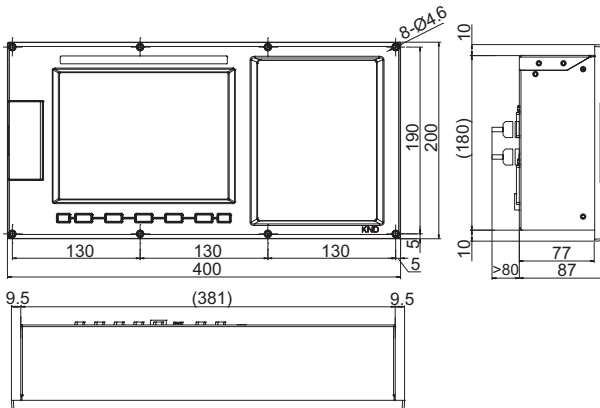


K1000T-C_i Installation dimension

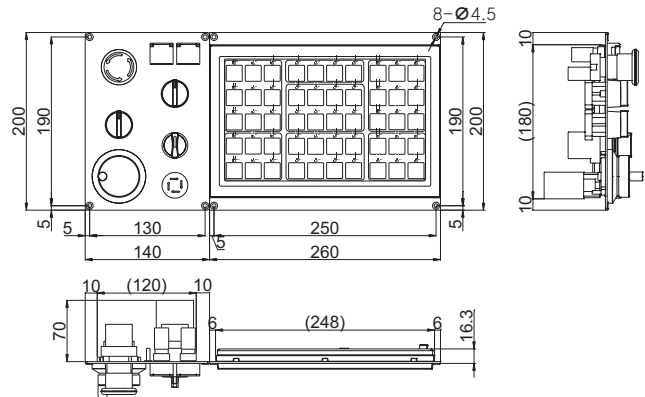


Additional operation panel installation dimension

▼ K1000TC_{1i} Horizontal CNC system

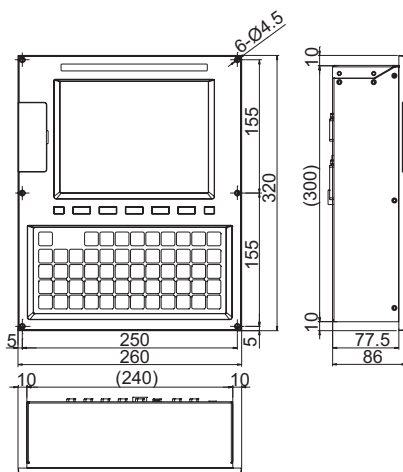


K1000TC_{1i} Installation dimension

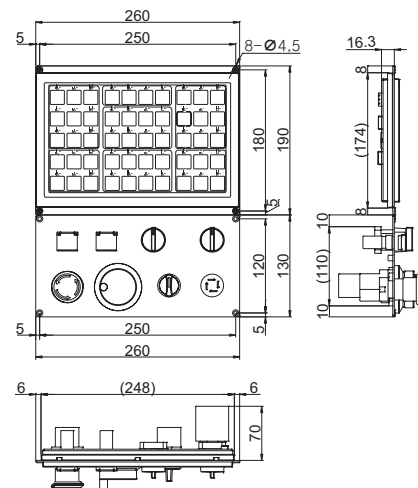


Additional operation panel installation dimension

▼ K1000TC_{2i} Vertical CNC system



K1000TC_{2i} Installation dimension



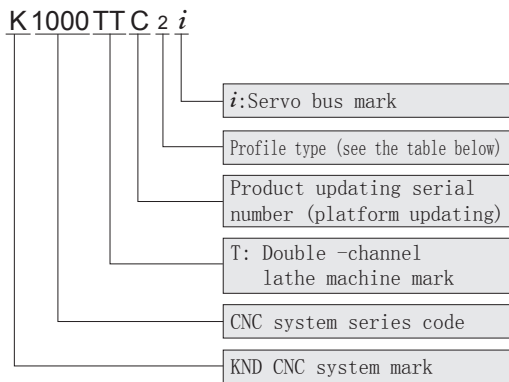
Additional operation panel installation dimension

K1000TTC_i DOUBLE-CHANNEL CNC SYSTEM FOR LATHE MACHINE

Product Brief

K1000TTC_i is a bus type double-channel CNC system for lathe machine developed by KND company. It adopts 8.4/10.4 inch LCD screen with horizontal/vertical structure and has 4 profiles totally. System communicates with servo unit in real time through KND serial servo bus (KSSB), which can control feed axes, analog spindle, digit spindle, I/O modules of two channels, etc. Separate control and operation for each channel is available, as well as interactive communication and control between two channels. This system can meet most of application requirements for double-channel lathe control.

Model Description



K1000TTC_i Double-channel CNC System for Lathe



Profile type				
Model	LCD screen		System panel	
	Type	Dimension	Button	Dimension
K1000TTC _{1i} —Horizontal	TFT	8.4 inch	Film button	400 × 200
K1000TTC _{2i} —Vertical	TFT	8.4 inch	Film button	260 × 320
K1000TTC _{3i} —Horizontal	TFT	10.4 inch	Film button	430 × 230
K1000TTC _{4i} —Vertical	TFT	10.4 inch	Film button	310 × 365

List of Specification

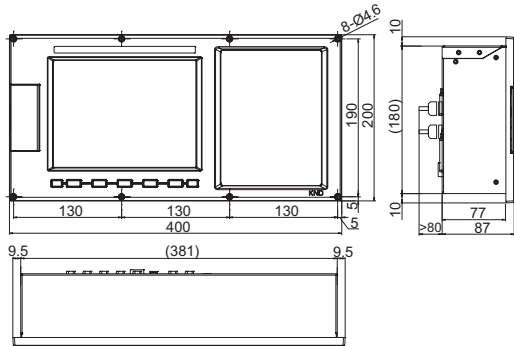
Project	Specification
	K1000TTC _i
Size	C1: 400 × 200, C2: 260 × 320, C3: 430 × 230, C4: 310 × 365
LCD screen	8.4/10.4 inch with resolution of 640 × 480
Control mode	KND Serial Servo Bus (KSSB)
Number of channels	2
Max. controlled axes	4 axes for each channel
Max. simultaneous axes	4 axes for each channel
Cs axes	1 axis for each channel (Optional)
Max. PLC axes	5 axes for each channel
Axis control function	Axes type: linear axis , A/B/C/D type rotation axis
	Synchronous axis function (Inside each channel), Axis interlock, Emergency stop , Software and hardware over-travel limit
Channel control function	Interactive control for spindle, single block check, common memories, waiting M codes between two channels, etc.
Preparation functions	G code system: A/B
	Up to 71 G codes, including rapid positioning, linear interpolation, circular interpolation, helix interpolation, thread cutting and interpolation, polar coordinate interpolation, plane selection, polar coordinate instructions, diameter & radius programming selection, reference point return, work coordinate system, local coordinate system, tool measurement, tool compensation, single canned cycle instructions, multiple canned cycle instructions, drilling/tapping canned cycle, dwell, etc.

Project	Specification
	K1000TTCi
Interpolation function	G00、G01、G02、G03、G32、G34、G07.2、G78.1
Feed function	Maximum rapid traverse speed: 240000mm/min
	Maximum feedrate speed: 60000mm/min
	Rapid override: F0、25%、50%、100%
	Feedrate override: 0 ~ 150% (16 gears)
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)
Thread function	Pitch: 0.01~500mm (Metric) ; 0.06~25400teeth/inch (Inch)
	Single/multiple thread, Metric/inch thread, Straight/tapper/face thread, Constant pitch/variable pitch thread, Circular thread
	Thread retracting length, angle and speed can be specified
	Digit spindle thread
Coordinate system and dimension	Least input increment: 0.001/0.0001mm
	Max stroke : $\pm 999999999 \times$ Least input increment
	Machine coordinate positioning (G53), Work coordinate system (G50, G54~G59), Local coordinate system (G52)
	Plane selection (G17, G18, G19)
	Metric/inch programming (G21/G20), Polar coordinate instructions (G15/G16), Absolute/incremental programming (G90/G91)
Measurement function	Skip function (G31) ,Automatic tool measurement function (G36、G37)
Spindle function	For each channel: KSSB controlled spindle : 1, Analog spindle: 1,Digital spindle: 1
	Multiple spindles function: Analog spindle can be extended
	Gear control(S01 ~ S08), Analog control(S0~S99999), Cs axis control
	Analog spindle automatically/manually shift gears, Digital spindle positioning, Support digit spindle "speed/position" shift
	Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless)
	One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set.
	Chuck check when spindle is running, Tailstock check, Spindle constant surface speed control (G96/G97) ,Rigid tapping, Spindle speed clamp, etc.
Tool function	3 axes tool compensation (X/Y/Z) ; Tool offset number:32 groups
	Tool length compensation, Tool nose radius compensation, Tool wear compensation
	Tool presetting: absolute tool presetting, incremental tool presetting, tool compensation value adjusting, etc.
Auxiliary function	Standard M codes: 51, which can be customized; Waiting M codes: M100~M199;
	Special M code: M21~M24, M71~M74, M91~M94
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs in U-disk
	Program remarks : Chinese and English IME
	Editing and executing multiple blocks in MDI mode
	Sub-program calling(63 layers nested at most), Sub-program calling when machining in DNC mode with a U-disk

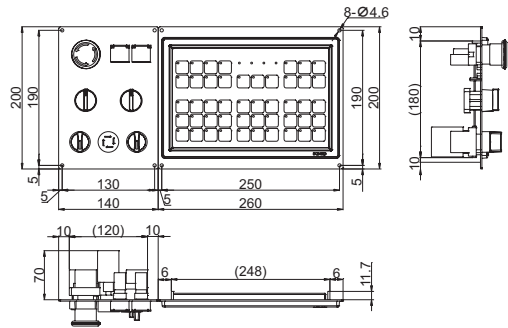
Project	Specification
	K1000TTCi
Program check	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.
Program restart	Breakpoint management, Power-off management, Restart at any position, etc.
Simplified programming	Single canned cycle (G90/G92~G94) , Multiple canned cycle (G70~G76)
	Drilling canned cycle (G83.5、G86.5、G80~G89) , Tapping canned cycle (G93、G84、G84.5)
	Chamfering and rounding programming, linear-angle programming
	Mirror image for X axis (G68、G69)
Compensation function	Tool length compensation, Tool nose radius compensation (G40~G42)
	Corner circular interpolation (G39), Compensation value can be input by G10 in a program
	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm
	Pitch-error compensation: Provide 512 compensation points for each axis, range: ± 0.1 mm
Macro program function	Custom macro B, Macro program calling(G65), Customized subprogram calling using G/M/T codes, Interruption calling of macro
Human-machine interface(HMI)	Language (for each channel): Chinese and English
	Graphics (for each channel): 2D graphics of tool path, 3D graphics of parts
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Ladder diagram, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, Tool No., Spindle gear, Screen saver, etc.
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.
	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm, External alarm, etc.
Protection function	Hardware over-travel limit, Stored stroke limit(software over-travel limit) , Dynamic workspace, Axis interlocking, Safety door interlock, Parameter protection, Program edition protection, Program encryption, PLC parameter protect, PLC Program encryption, etc.
	CNC parameter backup, PLC parameter backup, Tool offset data backup, Program backup, PLC program backup, Macro variables backup, Access electronic disk, System data backup(U disk operation), System data restore(U disk operation), etc.
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run , Single block run , Auto handle run
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection
PLC function	Open style PLC, display and edit ladder diagram on CNC, PLC-axis control
	DI: 20 points, DI/DO point number of KSSB remote I/O module SD1 : 32/32
	DI/DO point number can be extended up to 512/512 with KSSB controlled remote I/O modules
External interface	KSSB servo bus interface 1, KSSB servo bus interface 2, Spindle encoder interface , Feed axes pulse interface, Analog/digital spindle interface , High-speed input interface
	Machine operation panel interface , Additional panel interface , Separate operation box interface
	RS232/485 interface , CAN interface , USB interface , Ethernet interface
Matched driver	SD310 AC servo driver
	ZD210 spindle driver

System Shape and Installation Dimension

▼ K1000TTC_{1i} Horizontal CNC system

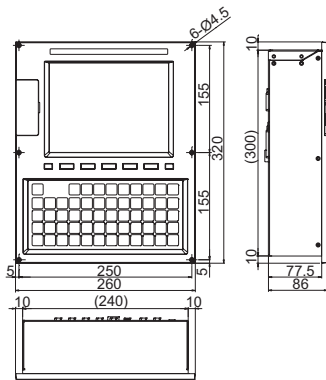


K1000TTC_{1i} Installation dimension

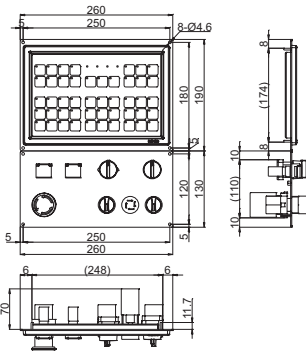


Additional operation panel installation dimension

▼ K1000TTC_{2i} Vertical CNC system

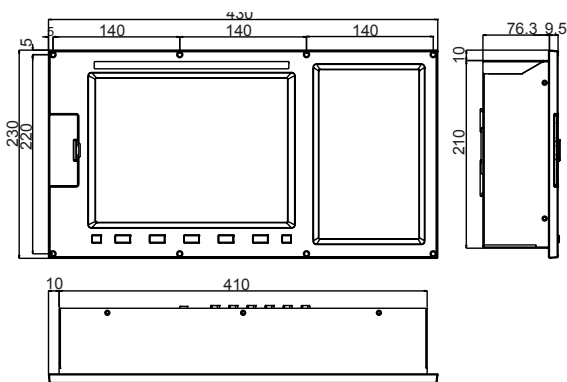


K1000TTC_{2i} Installation dimension

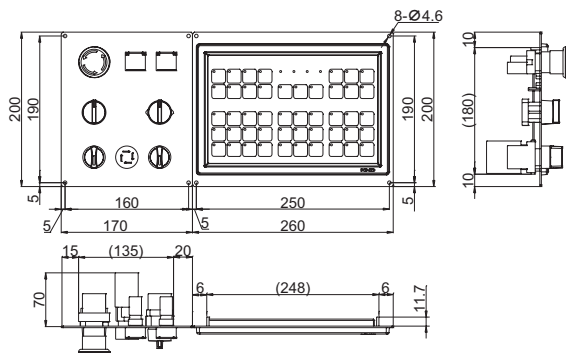


Additional operation panel installation dimension

▼ K1000TTC_{3i} Horizontal CNC system

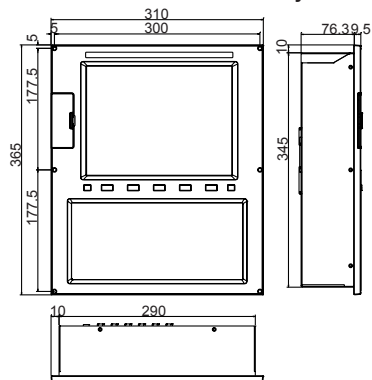


K1000TTC_{3i} Installation dimension

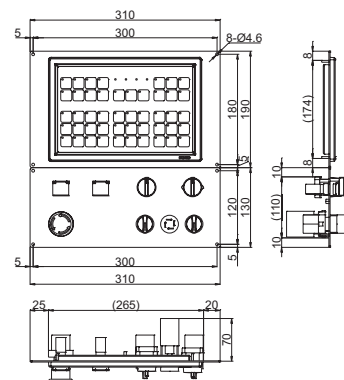


Additional operation panel installation dimension

▼ K1000TTC_{4i} Vertical CNC system



K1000TTC_{4i} Installation dimension



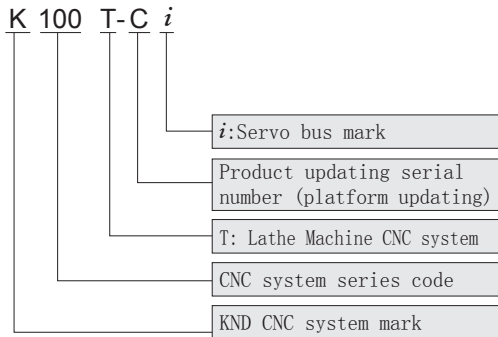
Additional operation panel installation dimension

K100T-Ci CNC SYSTEM FOR LATHE MACHINE

Product Brief

K100T-Ci is a popular CNC system for lathe machine, which is an updated new generation product. System software has added lots of new functions to meet customer's basic requirements. On hardware, K100T-Ci system succeeds consistent high reliability of KND products, which needs low requirements for surrounding environments suits extreme environments. It is the optimum choice for matching economic lathe machine.

Model Description



K100T-Ci Lathe Machine CNC System



List of Specification

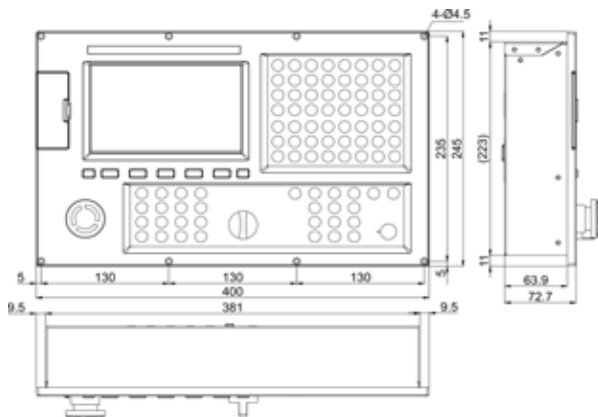
Project	Specification
	K100T-Ci
Size	400 × 245 (mm)
LCD screen	7 inch; Resolution: 800 × 480
Control mode	KND Serial Servo Bus (KSSB)
Axis control function	Max. controlled axes: 4 axes
	Max. simultaneous axes: 3 axes
	Axes type: linear axis , A/B/C/D type rotation axis
	Axis interlock, Emergency stop , Software and hardware over-travel limit
Preparation function	Up to 44 G codes, including rapid positioning, linear interpolation, circular interpolation, thread cutting and interpolation, reference point return, work coordinate system, tool compensation, cycle command, dwell, etc.
Interpolation function	G00、G01、G02、G03、G32、G34、G07.2、G78.1
Feed function	Maximum rapid traverse speed: 60000mm/min
	Maximum feedrate speed: 30000mm/min
	Rapid override: F0、25%、50%、100%
	Feedrate override: 0 ~ 150% (16 gears)
	High-speed & high-precision control : Acceleration & deceleration control before interpolation, 5 types of acceleration & deceleration curve, Speed smooth control

Project	Specification
	K100T-Ci
Reference point	Automatic reference point return (G28), Return from reference point (G29), 2nd and 3rd reference point return (G30)
Thread function	Pitch: 0.01~500mm (Metric) ; 0.06~25400teeth/inch (Inch)
	Single/multiple thread, Metric/inch thread, Straight/tapper/face thread, Constant pitch/variable pitch thread, Circular thread
	Thread retracting length, angle and speed can be specified, Digit spindle thread
Coordinate system and dimension	Least input increment: 0.001mm
	Max stroke : $\pm 99999999 \times$ Least input increment
	Work coordinate system G50, G54~G59
	Diameter/radius programming, Absolute/incremental programming
Skip function	G31
Spindle function	KSSB controlled spindle : 1, Analog spindle: 1, Digital spindle: 1
	Gear control(S01 ~ S08), Analog control(S0~S99999), Digit spindle control
	Analog spindle auto/manual shift gears, Digital spindle positioning, Support digit spindle “speed/position” shift
	Spindle speed override: 50 ~ 120%(8 steps), Analog voltage: 0 ~ 10V (stepless)
	One interface for feedback signals from spindle encoder and the resolution of spindle encoder can be set.
	Chuck check when spindle is running, Tailstock check, Spindle constant surface speed control (G96/G97) , G93 tapping, Spindle speed clamp, etc.
Tool function	Tool offset number: 16 groups
	Tool length compensation, Tool nose radius compensation, Tool wear compensation
	Tool presetting: absolute tool presetting, incremental tool presetting, tool compensation value adjusting, etc.
Auxiliary function	Standard M codes: 42, Special M codes: M21~M24, M71~M74, M91~M94
Program storage and edition	Program storage space: 640K (internal). Extension: access to a U-disk (no capacity limit). Electronic disk: 3
	Programming : Incremental programming , Absolute programming , Incremental/absolute compound programming , Decimal point programming
	Program edition: input, alter, delete, insert, search, copy, move, merge, etc. Editing programs on U-disk
	Editing and executing multiple blocks in MDI mode
	Sub-program calling(63 layers nested at most)
Program check	Fast drawing of tool path, Dry running, Single-block running, Machine lock, Auxiliary lock, Optional block stop, Optional block skip.
Simplified programming	Single canned cycle (G90/G92~G94) , Multiple canned cycle (G70~G76)

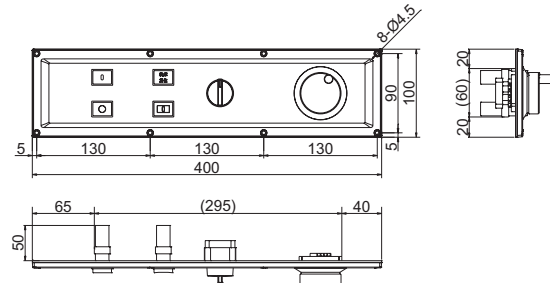
Project	Specification
	K100T-Ci
Compensation function	Backlash compensation : Use independent compensation values when executing positioning and cutting feed , range: 0 ~ 8mm
	Pitch-error compensation: Provide 128 compensation points for each axis, range: ± 0.1 mm
Human-machine interface(HMI)	Language : Chinese and English , Graphics: 2D graphics of tool path
	Current position, Program page, Program content, Parameter setting and display, Graph setting and display, Diagnosis data, Alarm, Run time, Parts count, Date, Time, Feed rate, Spindle speed, Spindle feed-back speed, etc.
	Index information: Operation list, G code list, Parameter list, Diagnosis parameter list, Macro instruction list, Alarm list, and other customized information, etc.
	Alarm: P/S alarm, Driver alarm, Over-travel alarm, System error alarm, KSSB alarm(only for KSSB controlled systems), External alarm, etc.
Operation management	Operation mode : AUTO, JOG, MDI, EDIT, HOME, PHOME, STEP(HANDLE)
	Program execution : AUTO run, MDI run, DNC run (U-disk , Ethernet , RS232), Dry run, Single block run, Auto handle run
	Program switch , Parameter switch , Time-limit power-on/off , Parameter/program password protection
PLC function	Standard built-in type PLC , DI/DO (total): 40/24
External interface	KSSB interface (only for bus controlled system), Spindle encoder interface , Feed axes pulse interface(only for non-bus controlled system), Analog spindle interface
	Machine operation panel interface , Additional panel interface , Separate operation box interface
	DI interface, DO interface, Turret interface, RS232/485 interface, USB interface
Matched driver	SD310 AC servo driver (optionally matched with absolute encoder)
	ZD210 spindle driver

System Shape and Installation Dimension

❖ K100T-Ci System installation dimension



K100T-Ci System installation dimension



Additional operation panel installation dimension

SD SERIES AC SYNCHRONOUS SERVO DRIVER

Product Brief

SD series AC synchronous servo driver is one of representative products of KND company. It has such characteristics as stable performance, abundant functions and perfect overload capacity. Matching with ST series servo motors can satisfy market requirements perfectly. SD310 driver can suit relative (absolute) encoder. SD310 driver adopts KND serial servo bus (KSSB) communication and suits relative (absolute) encoder or grating ruler.

Model Description

SD310 Series AC Synchronous Servo Driver

SD 310 - 75

Power (unit: 0.1kW)
Please refer to "List of Specification" for details.

310: SD310 AC synchronous servo driver

Synchronous servo driver series number



SD310-30

SD310-50

SD310-75

SD310-100

Product category

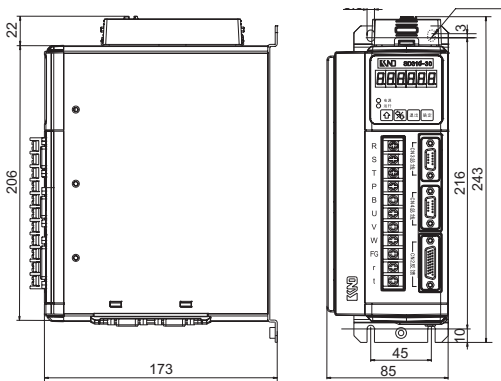
Product series	SD310
Maximum load current (A)	30,50,75,100
Matched encoder	Relative (absolute) encoder
Matched grating ruler	Incremental or absolute

List of Specification

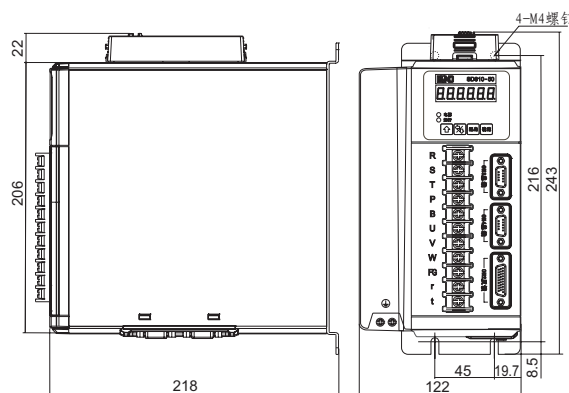
Name		Specification
		SD310
Work environment	Power	Three-phase(Single-phase) AC220V - 15 ~ + 10% 50/60Hz
	Temperature	Running: 0 ~ 55℃ Storage: - 20℃ ~ 80℃
	Humidity	90% RH or less (free from dew)
	Vibration	0.5g(4.9 m/s ²) or less, 10 ~ 60Hz (not continuously running)
	Prevention grade	IP10
	Altitude	1000 meters or lower
	Other	Keep away from powerful magnetic field , Take electrostatic protection measures
Control mode		Position control, Velocity control, Torque control, Pilot running in velocity control mode, Single-axis positioning control, IGBT-PWM vector control, Rotary table control, Closed loop control
Position control	Command input style	Servo bus (KSN)
	Electronic gear ratio	1 ~ 32767 / 1 ~ 32767
	Feedback equipment	2500 pulses/r incremental encoder, 17-bit absolute encoder (Mechanical or battery-operated), Incremental or absolute grating ruler (SD310 driver)
Velocity control	Command input style	Servo bus (KSN)
	Frequency characteristic	200Hz
	Velocity range	1 ~ 5000 (rpm) (The lower limit of the velocity range is the least speed that the motor keeps rotation under condition of rated torque load)
	Speed arrived	Support
Velocity control	Command input style	Servo bus (KSN)
	Frequency characteristic	200Hz
	Velocity range	1 ~ 5000 (rpm) (The lower limit of the velocity range is the least speed that the motor keeps rotation under condition of rated torque load)
	Speed arrived	Support

Name		Specification
		SD310
Torque control	Command input style	Servo bus (KSN)
	Maximum velocity clamping function	Support
	Torque limit	Support
Acceleration/ deceleration control		In both velocity control mode and pilot running in velocity control mode, exponential acceleration/ deceleration control is available. The time constants used are set in parameters PA40 & PA41(1~1000ms)
Friction compensation function		Support
Input signal	Universal function	Servo driver enabled, Clear alarms, Enable CCW control, Enable CW control
	Specific function	Deceleration switch DEC input, Extended DI input
Output signal	Universal function	Servo ready output, Servo alarm output, Positioning finished/speed arrived output, External mechanical brake enabled, Specifying active level of output signal by parameters.
	Specific function	Torque limit output
Monitoring function	Universal function	Rotation speed, Current position, Command position, Offset between the command and actual position, Torque load ratio, Phase current, Current control mode, Speed command, IO signals, Current torque, Vibration frequency, Some other monitoring functions
	Specific function	Current alarm/warning numbers, Software version, Synchronous period of servo bus (KSN), Encoder/ grating ruler feedback position, Positioning coordinates in Single-axis positioning control mode
Protection function		Feedback velocity exceeds available range, Command velocity exceed available range, Overvoltage or low-voltage in main circuits, Transient overcurrent, Long term overload, Abnormal braking, Encoder malfunction, Position offset is out-of-tolerance, Limit switches malfunction, Battery low-voltage warning
Overtravel limit protection		Hardware overtravel switches signals; Software overtravel protection function (absolute encoders or grating ruler).
Available load inertia		Less than 7 times of servo motor inertia

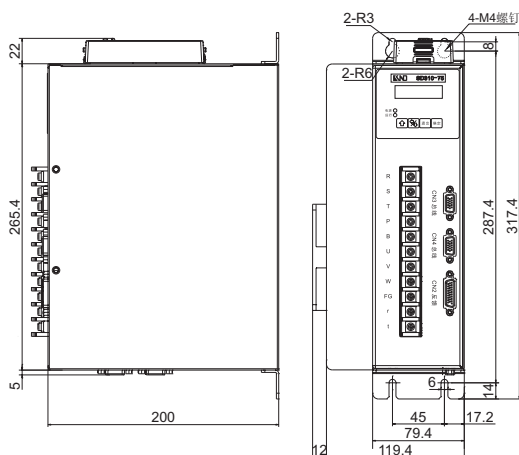
Installation Dimensions



SD300-50 installation dimension (unit: mm)



SD310-50 installation dimension (unit: mm)



SD310-75/100 installation dimension (unit: mm)

List of Matched Motors for SD Series Servo Drivers

Servo driver model (SD310- □)	Rated current of matched motor (A)
30	$I \leq 6$
50	$6 \leq I \leq 10$
75	$10 \leq I \leq 15$
100	$15 \leq I \leq 25$

Motor model	Rated power (Kw)	Zero-speed torque (Nm)	Rated speed (rpm)	Rated current (A)	Driver model: 310			
					30	50	75	100
80STM01330	0.4	1.3	3000	3.6	◆			
80STM02430	0.75	2.4	3000	4.5	◆			
80STM03330	1	3.3	3000	5.0	◆			
90STM01530	0.45	1.5	3000	2.8	◆			
80STM01330	0.4	1.3	3000	2.6	◆			
80STM02430	0.75	2.4	3000	4.0	◆			
80STM03330	1.0	3.3	3000	4.5	◆			
90STM01530	0.45	1.5	3000	2.8	◆			
90STM02430	0.75	2.4	3000	3.0	◆			
90STM03530	1.1	3.5	3000	4.2	◆			
110STM02030	0.6	2	3000	2.7	◆			
110STM04030	1.2	4	3000	4.3	◆			
110STM05030	1.5	5	3000	5.0	◆			
110STM06020	1.2	6	2000	4.3	◆			
110STM06030	1.8	6	3000	5.8	◆			
130STM04025	1	4	2500	3.4	◆			
130STM05025	1.3	5	2500	5.9	◆			
130STM06025	1.5	6	2500	5.8	◆			
130STM07725	2	7.7	2500	7.5		◆		
130STM10015	1.6	10	1500	4.9	◆			
130STM10025	2.6	10	2500	7.5		◆		
130STM15015	2.4	15	1500	8.7		◆		
130STM15025	3.9	15	2500	12.6			◆	
150STM18015	2.8	18	1500	8.8		◆		
150STM23015	3.6	23	1500	11.8			◆	
150STM27015	4.2	27	1500	15			◆	
150STM32015	5.0	32	1500	18.5				◆
180ST.HM18015	3.0	18	1500	16.5			◆	
180ST.HM25015	4.0	25	1500	24.5				◆
180ST.HM32015	5.1	32	1500	31.0				◆
180STM40010	4.2	40	1000	24.0				◆
180STM50010	5.3	50	1000	32.0				◆
180STM63010	6.6	63	1000	37.0				◆
180STM75010	7.8	75	1000	45.0				◆

Note 1: Matched drivers marked with “◆” in the list above correspond to the selected motors.

Note 2: Matched drivers for motors are selected according to motor power, not encoder type.

Note 3: Please refer to chapter of motor of this manual for motor encoder types.

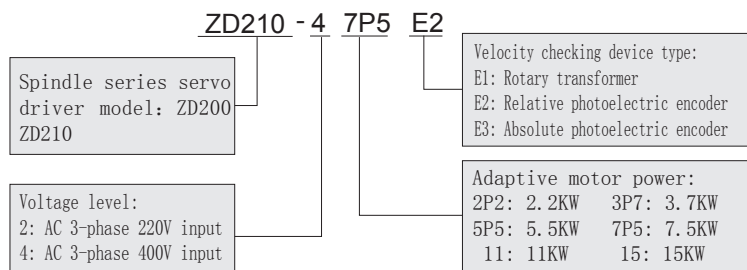
ZD SERIES AC ASYNCHRONOUS SPINDLE SERVO DRIVER

Product Brief

ZD series AC asynchronous spindle servo driver is one of matching products for CNC systems developed by KND company. This product has stable capability, abundant functions, and perfect overload capacity. Matching with ZJY series spindle motors of KND company can realize excellent performance. It can also match motors of other companies. Perfect self-learning function can make users free from complicated parameter setting. Connecting KND CNC system by KND serial servo bus (KSSB) interface can realize checking parameters of spindle driver and diagnosing status of spindle driver on CNC system, as well as performing self-learning, reset and reboot operations.

Model Description

ZD210 series AC asynchronous spindle servo driver



List of Specification

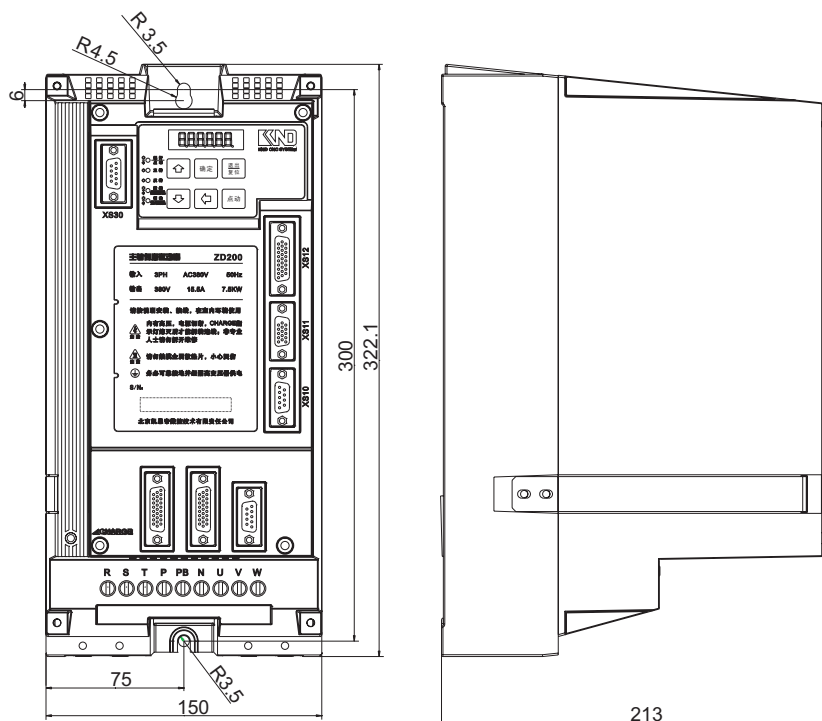
Name		Specification
		ZD210
Control characteristic	Control mode	Position control, Velocity control, Torque control, Position-velocity control shift
	Velocity control range	1:8000
	Velocity control precision	± 0.1%
	Moment characteristic	± 5%
	Maximum overload current	200% of rated current
	Command input style	-10V ~ 10V, 0V ~ 10V, 0 ~ 20mA, Pulse input
	Acceleration & deceleration characteristic	Bell shaped curve, S curve acceleration & deceleration
	Braking style	Resistance braking
	Self-learning function	Data such as motor parameters and load inertia can be self-learned.
DI/DO interface	Digital input	10 ways of optocoupler input (2 ways of them are fixed functions, 8 ways of them can be customized)
	Digital output	4 ways of optocoupler output, functions of which can be customized.
	Relay output	2 ways, functions of which can be customized.
	Bus interface	Servo bus (KSSB)
	Encoder input interface	2interfaces, which supports relative encoder, rotary transformer and absolute encoder
	PC interface	RS232 serial communication standard, support ModBUS protocol
Spindle function	Velocity control	Range: 0 ~ 8000rpm; Servo bus velocity command
	Spindle orientation	S curve rapid spindle orientation, orientation position can be specified automatically, support external encoder orientation and rapid orientation function is available.
	Spindle gear box	8 groups of gear ratio setting
	Other functions	C axis control, Thread cutting, Electronic gear ratio setting
Protection function	Motor protection	Protected by electronic heat sensitive devices
	Instantaneous overcurrent protection	Protection is activated when current is greater than 200% of rated current
	Overvoltage	Double protection of hardware and software
	Low voltage	Double protection of hardware and software
	Abnormality protection	Abnormal braking, Encoder malfunction
	Power module overheat	Alarm and error prompt
	Grounding protection	Protected by electronic circuit
Mechanical braker	Braking sequence can be specified	

Name		Specification
		ZD210
Work environment	Temperature	-10°C ~ +45°C
	Humidity	90% RH or less (free from dew)
	Storage temperature	-20°C ~ +60°C (limit value corresponds to short term temperature during transportation)
	Altitude	1000 meters or lower
	Vibration	0.5g(4.9 m/s ²) or less, 10 ~ 60Hz (not continuously running)

Matched Motors and Electrical Specifications:

Model ZD210 - □		42P2	43P7	45P5	47P5	4011	4015
Maximum matched motor capacity (kW)		2.2	3.7	5.5	7.5	11	15
Rated output	Output capacity (kVA)	4.2	7	11.3	13.7	18.3	24
	Rated output current (A)	5.5	9	14	18.5	26	35
	Maximum output voltage (V)	600V					
	Maximum output frequency (Hz)	300Hz					
Rated input	Rated voltage Rated frequency	3-phase 380V 50Hz/60Hz					
	Tolerance of voltage fluctuation	-15% ~ +10%					
	Tolerance of frequency fluctuation	± 5%					
Selection of braking resistor	W	400	800	1000	1600	2000	2000
		150	75	75	40	26	26
Selection of breaker	A	10	16	30	30	50	60
Selection of contactor	A	9	16	18	20	30	50
Selection of oscilloscope	A	7.5	10	15	20	30	40
	mH	3.6	2.2	1.42	1.06	0.7	0.53

Installation Dimensions



Fixed screw: M6 flat head screw with length less than 10mm
ZD200/ZD210 installation dimensions

ST SERIES AC SYNCHRONOUS SERVO MOTOR

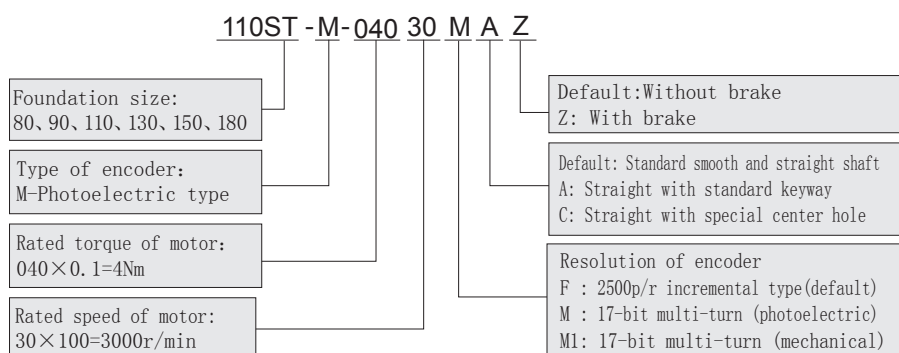
Product Brief

ST series AC synchronous servo motors developed by Beijing KND CNC Technique Co., LTD. are used for equipping CNC machines. Foundation sizes contain 6 series such as 80, 90, 110, 130, 150 and 180 etc., altogether 32 varieties. Selecting high-quality raw materials and parts can effectively keep motors working well during long-term, high-speed and continuous running. The motor matching with AC servo driver of KND SD series together can make the machine work in good performance.



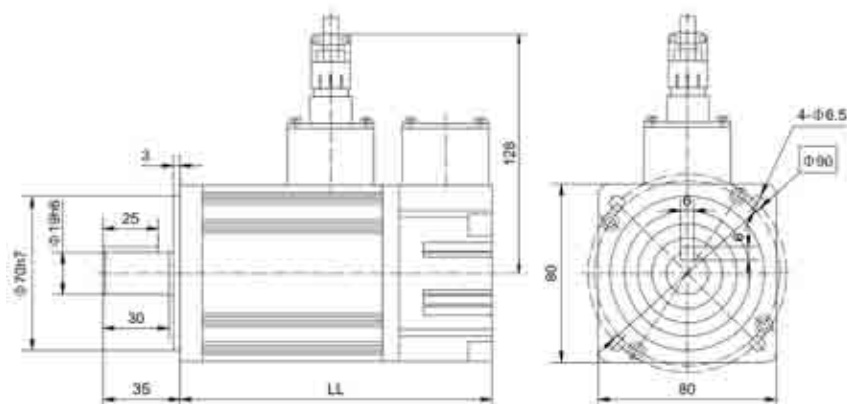
Using IP66 protection class to meet industry environment such as temperature -15°C - 40°C, dust and oil mist.

Model Description



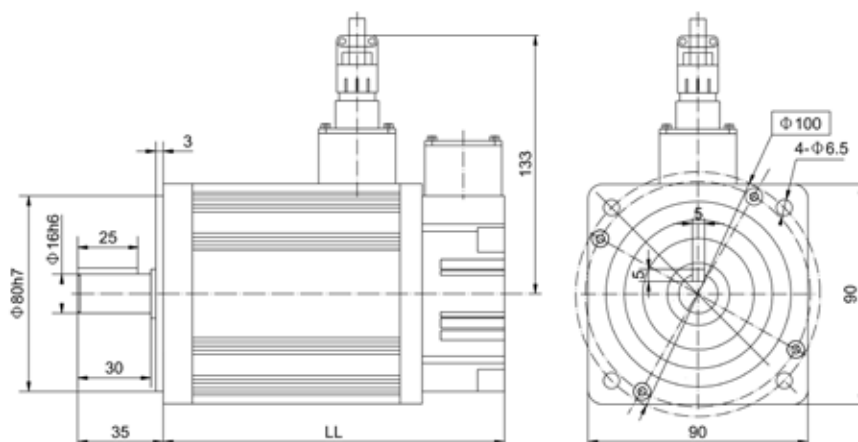
ST Series AC Synchronous Servo Motor Technical Specifications

80 series AC servo motor specifications and dimensions				
Model	80ST	80ST	80ST	
	M01330	M02430	M03330	
Rated Power (Kw)	0.4	0.75	1.0	
Rated Torque (N.m)	1.3	2.4	3.3	
Instantaneous Peak Torque (N.m)	2.6	4.8	6.6	
Rated Speed (rpm)	3000	3000	3000	
Maxi. Speed (rpm)	3600	3600	3600	
Rated Current (A)	2.6	4.0	4.5	
Instantaneous Maxi. Current (A)	5.2	8.0	9.0	
Rotor Inertia (Kg.cm ²)	1.18	1.59	2.03	
Weight (Kg) (without brake)	2.7	3.4	4.2	
Number of Pole-pairs	4			
Working Voltage of Adapted Driver (VAC)	220			
Insulation Class	F			
Protection Class	IP66			
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)			
Mounting Method	Flange method			
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)		
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)		
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil		
	Vibration	Vibration speed: 1.8mm/s below		
LL	Without brake	147	174	204
	With brake	194	224	264
Torque-speed Figure	Fig. 1	Fig. 2	Fig. 3	



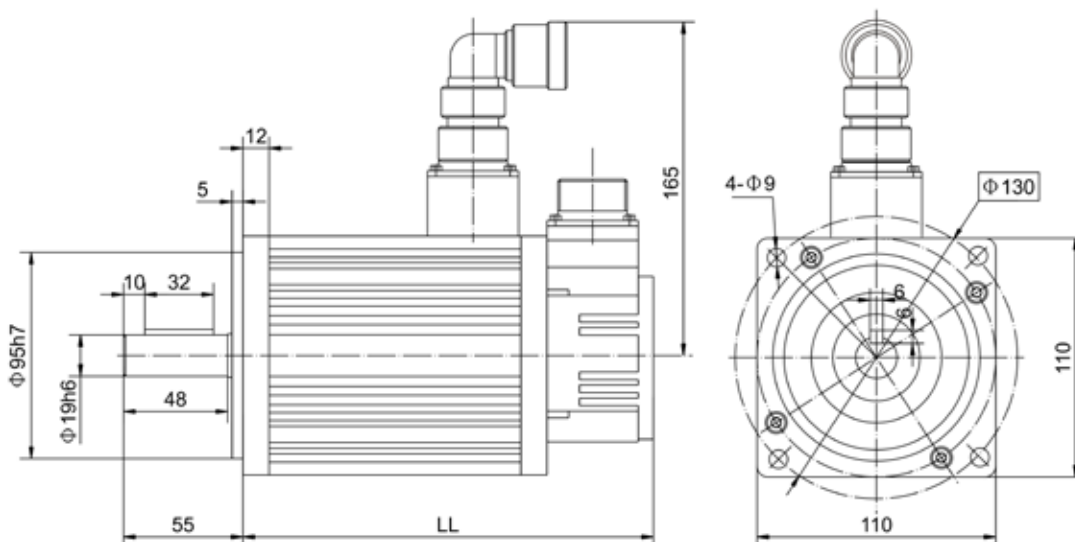
90 series AC servo motor specifications and dimensions

Model	90ST	90ST	90ST	
	M01530	M02430	M03530	
Rated Power (Kw)	0.45	0.75	1.1	
Rated Torque (N.m)	1.5	2.4	3.5	
Instantaneous Peak Torque (N.m)	3.0	4.8	7.0	
Rated Speed (rpm)	3000	3000	3000	
Maxi. Speed (rpm)	3600	3600	3600	
Rated Current (A)	2.8	3.0	4.2	
Instantaneous Maxi. Current (A)	5.6	6.0	8.4	
Rotor Inertia (Kg.cm ²)	1.51	2.37	2.70	
Weight (Kg) (without brake)	2.8	3.5	4.0	
Number of Pole-pairs	4			
Working Voltage of Adapted Driver (VAC)	220			
Insulation Class	F			
Protection Class	IP66			
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)			
Mounting Method	Flange method			
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)		
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)		
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil		
	Vibration	Vibration speed: 1.8mm/s below		
LL	Without brake	142	162	172
	With brake	192	212	222
Torque-speed Figure	Fig. 4	Fig. 5	Fig. 6	



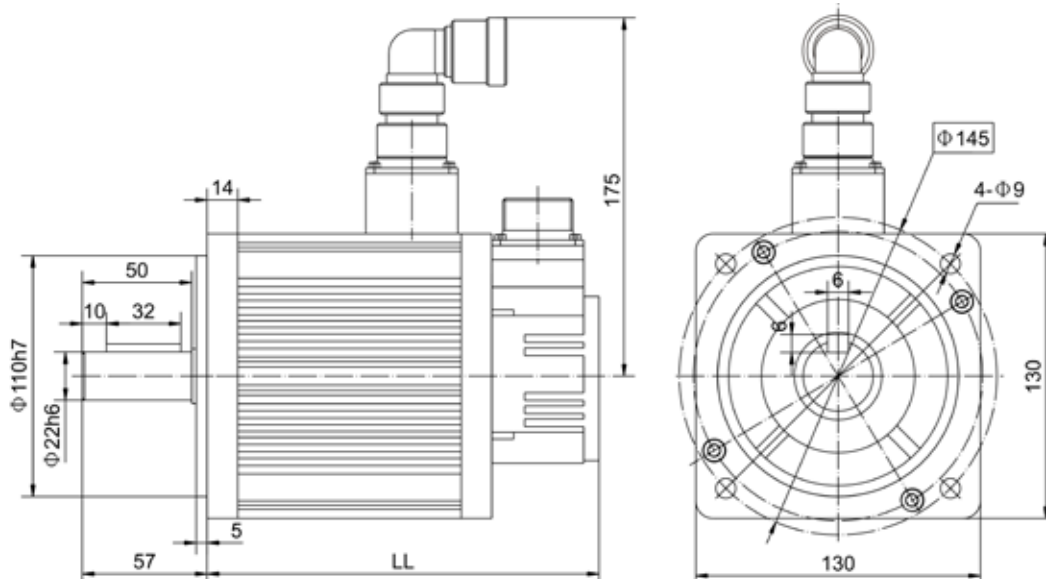
110 series AC servo motor specifications and dimensions

Model	110ST	110ST	110ST	110ST	110ST	
	M02030	M04030	M05030	M06020	M06030	
Rated Power (Kw)	0.6	1.2	1.5	1.2	1.8	
Rated Torque (N.m)	2	4	5	6	6	
Instantaneous Peak Torque (N.m)	5	10	12.5	15	15	
Rated Speed (rpm)	3000	3000	3000	2000	3000	
Maxi. Speed (rpm)	3600	3600	3600	2400	3600	
Rated Current (A)	2.7	5.0	6.0	5.5	7.0	
Instantaneous Maxi. Current (A)	6.75	12.5	15.0	13.75	17.5	
Rotor Inertia (Kg.cm ²)	3.83	6.81	8.24	9.43	9.43	
Weight (Kg) (without brake)	4.3	6.1	7.0	8.0	8.0	
Number of Pole-pairs	4					
Working Voltage of Adapted Driver (VAC)	220					
Insulation Class	F					
Protection Class	IP66					
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)					
Mounting Method	Flange method					
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)				
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)				
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil				
	Vibration	Vibration speed: 1.8mm/s below				
LL	Without brake	158	188	203	218	218
	With brake	205	235	250	265	265
Torque-speed Figure	Fig. 7	Fig. 9	Fig. 10	Fig. 11	Fig. 12	



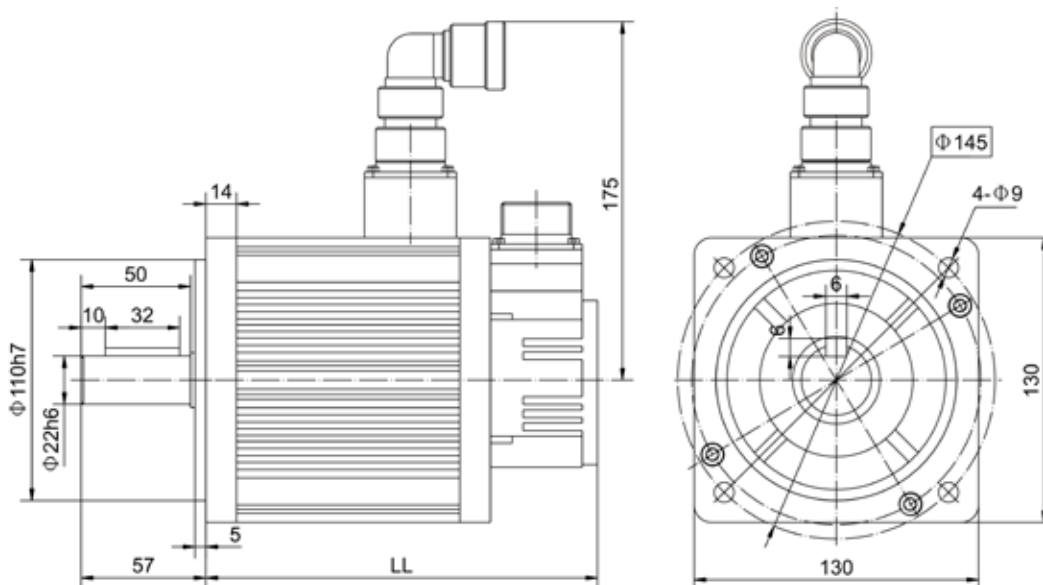
130 series AC servo motor specifications and dimensions 1

Model	130ST	130ST	130ST
	M04025	M05025	M06025
Rated Power (Kw)	1.0	1.3	1.5
Rated Torque (N.m)	4	5	6
Instantaneous Peak Torque (N.m)	10	12.5	15
Rated Speed (rpm)	2500	2500	2500
Maxi. Speed (rpm)	3000	3000	3000
Rated Current (A)	4.0	5.5	6.0
Instantaneous Maxi. Current (A)	10.0	13.75	15.0
Rotor Inertia (Kg.cm ²)	10.6	12.4	12.9
Weight (Kg) (without brake)	6.3	7.2	7.4
Number of Pole-pairs	4		
Working Voltage of Adapted Driver (VAC)	220		
Insulation Class	F		
Protection Class	IP66		
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)		
Mounting Method	Flange method		
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)	
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)	
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil	
	Vibration	Vibration speed: 1.8mm/s below	
LL	Without brake	165	178
	With brake	216	229
Torque-speed Figure	Fig. 14	Fig. 16	Fig. 18



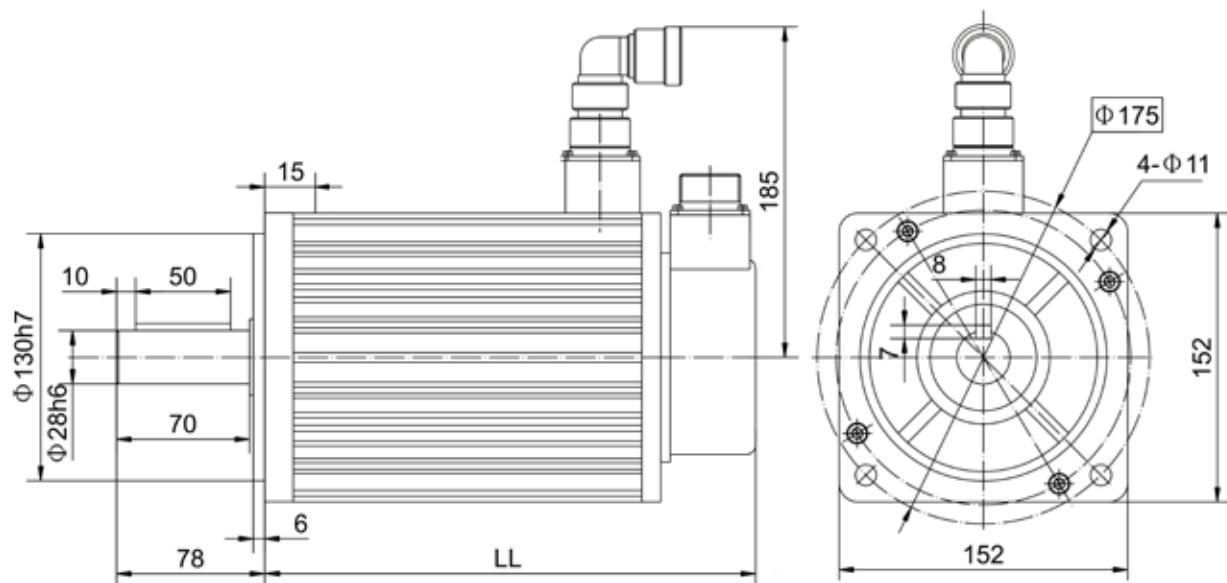
130 series AC servo motor specifications and dimensions 2

Model	130ST	130ST	130ST	130ST	130ST	
	M07725	M10015	M10025	M15015	M15025	
Rated Power (Kw)	2.0	1.6	2.6	2.4	3.9	
Rated Torque (N.m)	7.7	10	10	15	15	
Instantaneous Peak Torque (N.m)	19.3	25	25	37.5	37.5	
Rated Speed (rpm)	2500	1500	2500	1500	2500	
Maxi. Speed (rpm)	3000	1800	3000	1800	3000	
Rated Current (A)	6.5	6.0	10.0	9.0	14.5	
Instantaneous Maxi. Current (A)	16.25	15.0	25.0	22.5	36.25	
Rotor Inertia (Kg.cm ²)	18.2	23.2	23.2	27.5	27.5	
Weight (Kg) (without brake)	9.1	10.9	10.9	12.4	12.4	
Number of Pole-pairs	4					
Working Voltage of Adapted Driver (VAC)	220					
Insulation Class	F					
Protection Class	IP66					
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)					
Mounting Method	Flange method					
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)				
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)				
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil				
	Vibration	Vibration speed: 1.8mm/s below				
LL	Without brake	204	224	224	240	240
	With brake	255	275	275	291	291
Torque-speed Figure	Fig. 20	Fig. 21	Fig. 22	Fig. 23	Fig. 24	



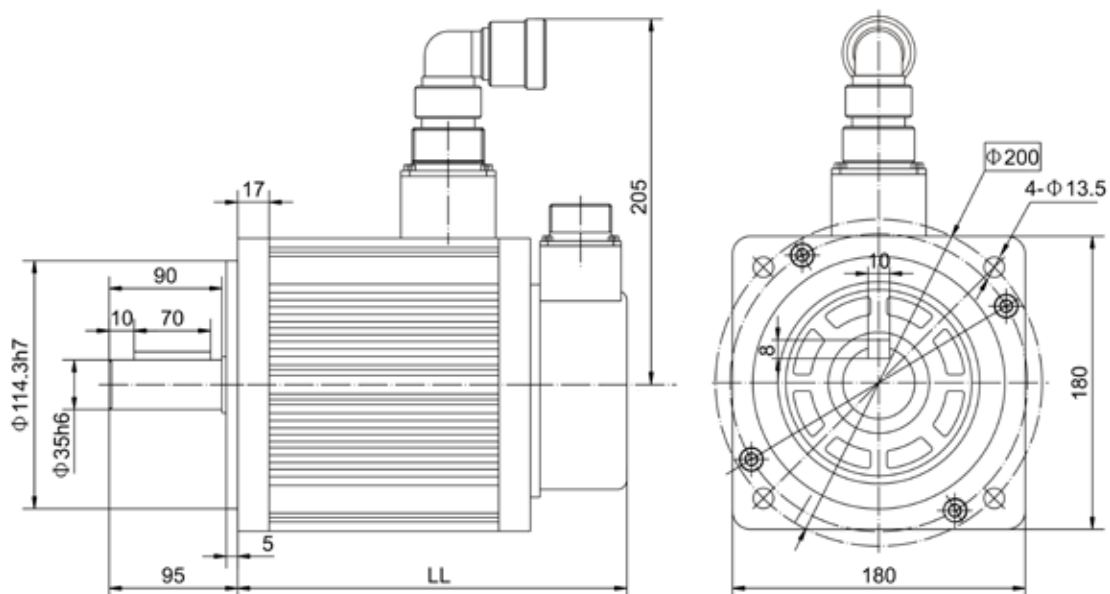
150 series AC servo motor specifications and dimensions

Model	150ST	150ST	150ST	150ST	
	M18015	M23015	M27015	M32015	
Rated Power (Kw)	2.8	3.6	4.2	5.0	
Rated Torque (N.m)	18	23	27	32	
Instantaneous Peak Torque (N.m)	45	57.5	67.5	80	
Rated Speed (rpm)	1500	1500	1500	1500	
Maxi. Speed (rpm)	2000	2000	2000	2000	
Rated Current (A)	8.8	11.8	15.0	18.5	
Instantaneous Maxi. Current (A)	22.0	29.5	37.5	46.3	
Rotor Inertia (Kg.cm ²)	63.1	82.4	94.8	107	
Weight (Kg) (without brake)	17.1	20.7	23.0	25.0	
Number of Pole-pairs	4				
Working Voltage of Adapted Driver (VAC)	220				
Insulation Class	F				
Protection Class	IP66				
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)				
Mounting Method	Flange method				
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)			
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)			
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil			
	Vibration	Vibration speed: 1.8mm/s below			
LL	Without brake	248	278	298	318
	With brake	309	339	359	379
Torque-speed Figure	Fig. 25	Fig. 26	Fig. 27	Fig. 28	



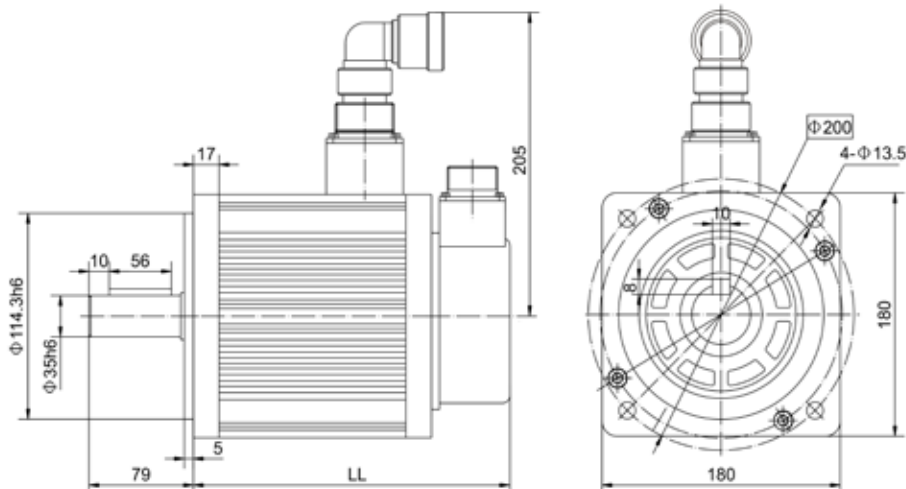
180 series AC servo motor specifications and dimensions

Model	180ST	180ST	180ST	180ST	
	M40010	M50010	M63010	M75010	
Rated Power (Kw)	4.2	5.3	6.5	7.8	
Rated Torque (N.m)	40	50	63	75	
Instantaneous Peak Torque (N.m)	100	125	140	150	
Rated Speed (rpm)	1000	1000	1000	1000	
Maxi. Speed (rpm)	2000	2000	2000	2000	
Rated Current (A)	24.0	32.0	37.0	45.0	
Instantaneous Maxi. Current (A)	60.0	80.0	82.0	90.0	
Rotor Inertia (Kg.cm ²)	153	173	200	230	
Weight (Kg) (without brake)	30.3	33.5	36.7	41.8	
Number of Pole-pairs	4				
Working Voltage of Adapted Driver (VAC)	220				
Insulation Class	F				
Protection Class	IP66				
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)				
Mounting Method	Flange method				
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)			
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)			
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil			
	Vibration	Vibration speed: 1.8mm/s below			
LL	Without brake	290	310	330	360
	With brake	366	386	406	436
Torque-speed Figure	Fig. 29	Fig. 30	Fig. 31	Fig. 32	



High-speed 180 series AC servo motor specifications and dimensions

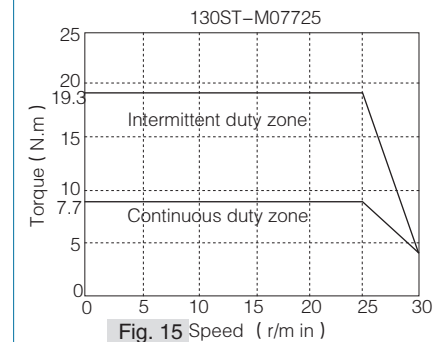
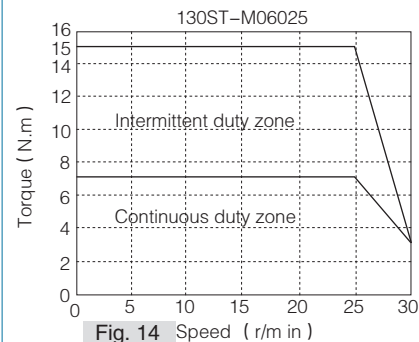
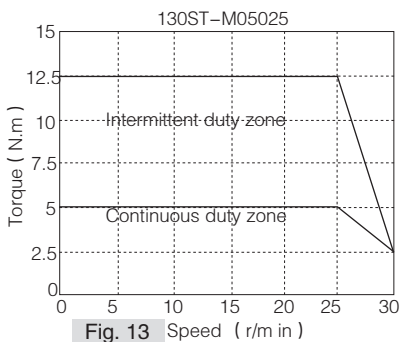
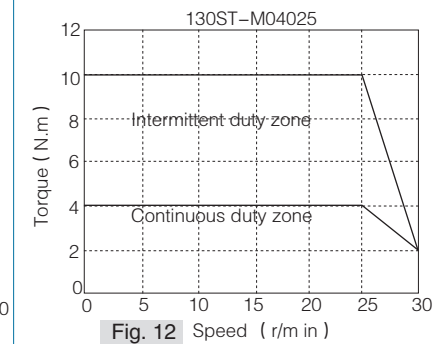
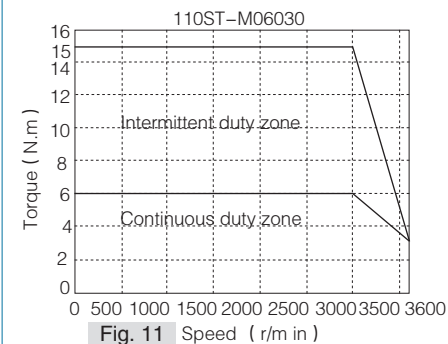
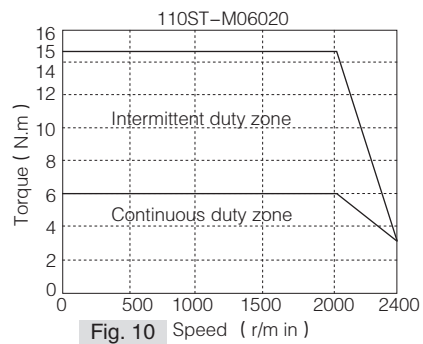
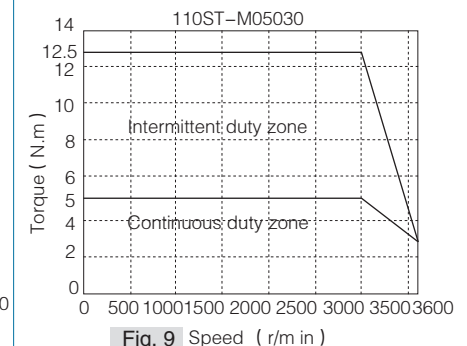
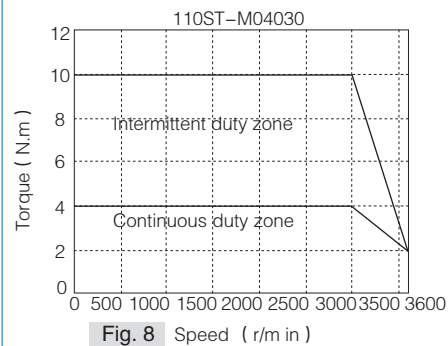
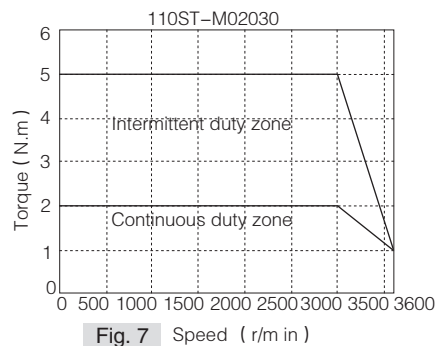
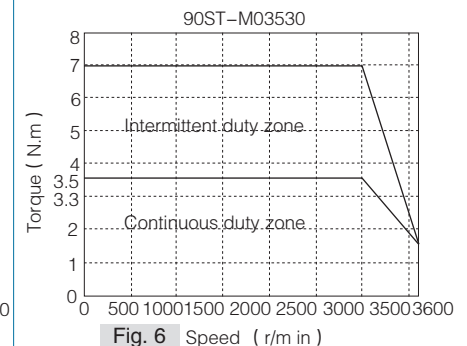
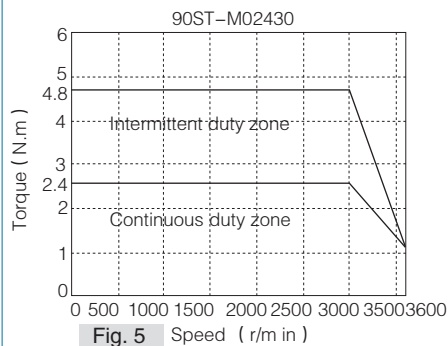
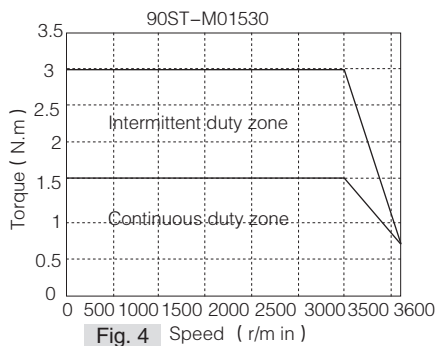
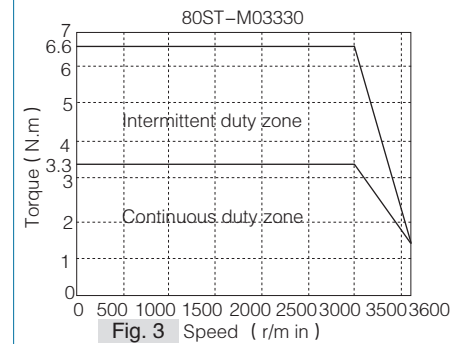
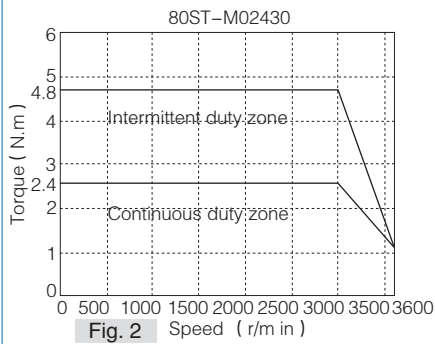
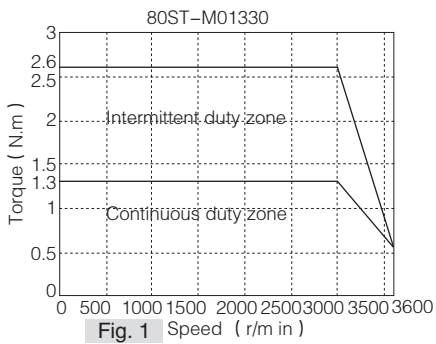
Model	180ST.H	180ST.H	180ST.H	
	M18015	M25015	M32015	
Rated Power (Kw)	2.9	4.0	5.0	
Rated Torque (N.m)	18	25	32	
Instantaneous Peak Torque (N.m)	45	62.5	80	
Rated Speed (rpm)	1500	1500	1500	
Maxi. Speed (rpm)	3000	3000	3000	
Rated Current (A)	16.5	24.5	31.0	
Instantaneous Maxi. Current (A)	51.25	62.5	72.2	
Rotor Inertia (Kg.cm ²)	61.5	89.0	123.0	
Weight (Kg) (without brake)	17.8	21.9	26.2	
Number of Pole-pairs	4			
Working Voltage of Adapted Driver (VAC)	220			
Insulation Class	F			
Protection Class	IP66			
Encoder	2500P/r Incremental, 17-bit Absolute (Optional)			
Mounting Method	Flange method			
Environment	Temperature	-15 ~ 40°C (no freeze), Storage temperature: -15 ~ 70°C (no freeze)		
	Humidity	80%RH below (free from dew), Storage temperature: 90%RH below (free from dew)		
	Air	Indoor (no direct sunlight), No corrosive or flammable gases, No dust or oil		
	Altitude	1000m below		
	Vibration	Vibration speed: 1.8mm/s below		
LL	Without brake	215	240	270
	With brake	375	400	430
Torque-speed Figure	Fig. 28	Fig. 29	Fig. 30	

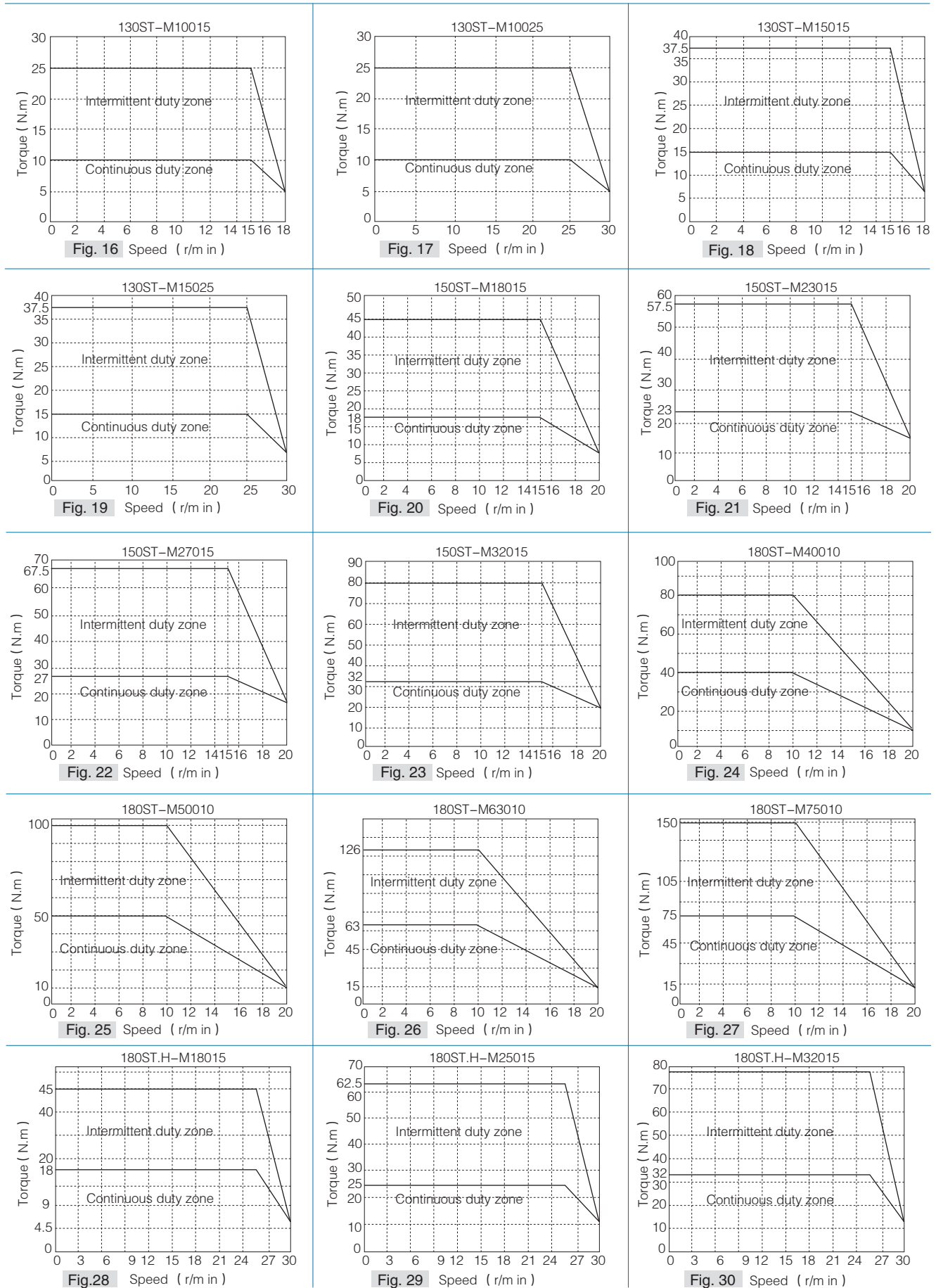


Specifications of Safe Brake Equipped with ST Series Motors

Foundation Size	Rated Torque	Rated Voltage	Rated Current	Added Weight
80、90	4Nm	DC24V	0.8A	1.1kg
110	8Nm	DC24V	0.9A	1.9kg
130	8、16Nm	DC24V	0.9、1.2A	2.1、2.9kg
150	30Nm	DC24V	1.6A	3.9kg
180	30、50Nm	DC24V	1.6、2.0A	4.7、5.9kg

Torque-speed Characteristics of AC Servo Motors:



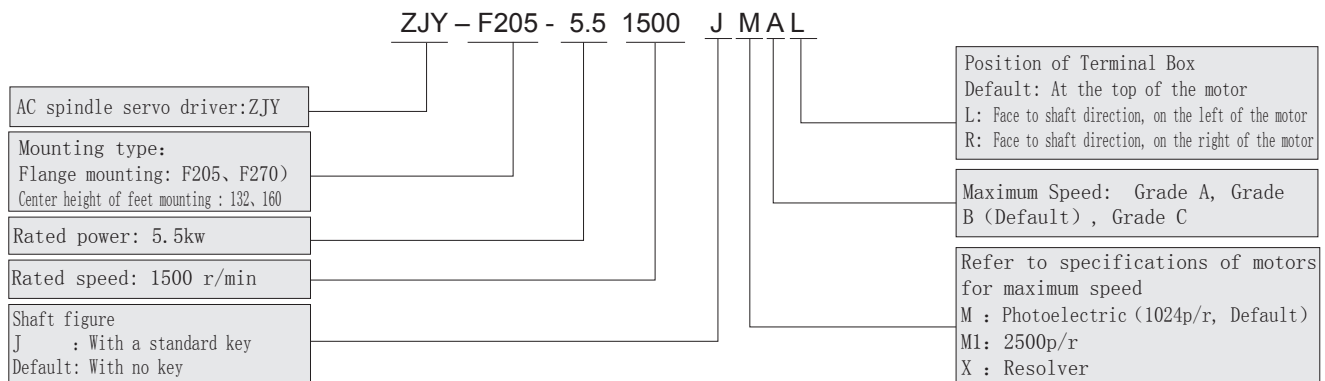


ZJY SERIES AC ASYNCHRONOUS SPINDLE SERVO MOTOR

Product Brief

ZJY series AC spindle servo motor is designed for use with CNC machine tools by Beijing KND CNC Technique Co., Ltd. These motors have some characteristics such as simple construction, long service life, small rotation inertia, and high control precision etc. The motor matched with new type of KND ZD200/ZD210 spindle servo driver is the best product of power electronics and motor integration. They are generally used in all kinds of CNC machine tools, other spindle or feeding axis of CNC mechanical products, and other driving of functional units.

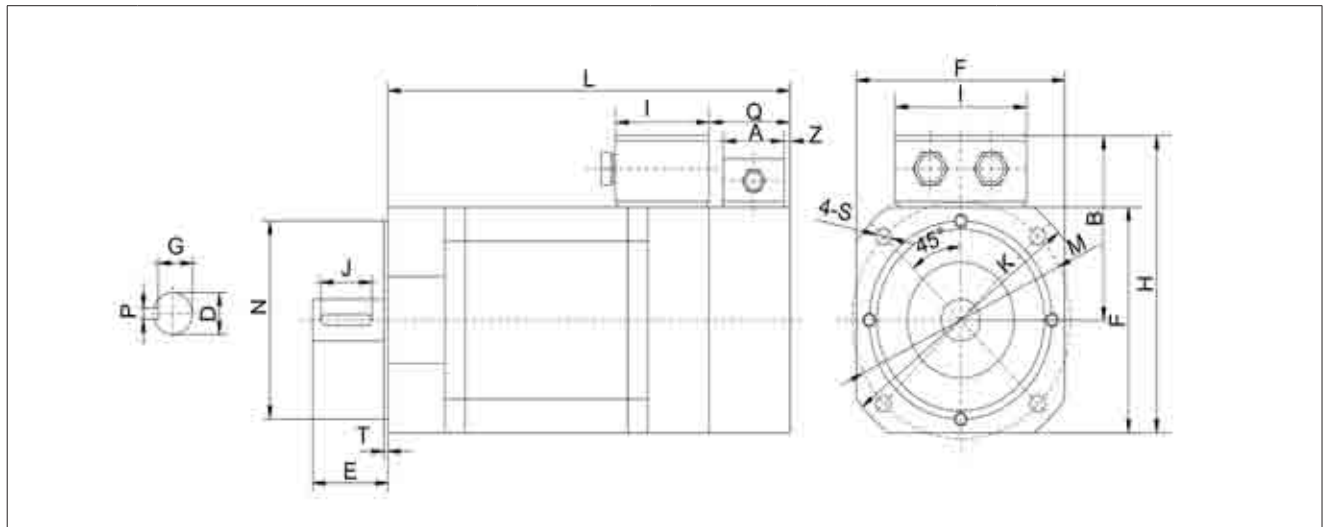
Model Description



Performance Parameters of F205 and 132

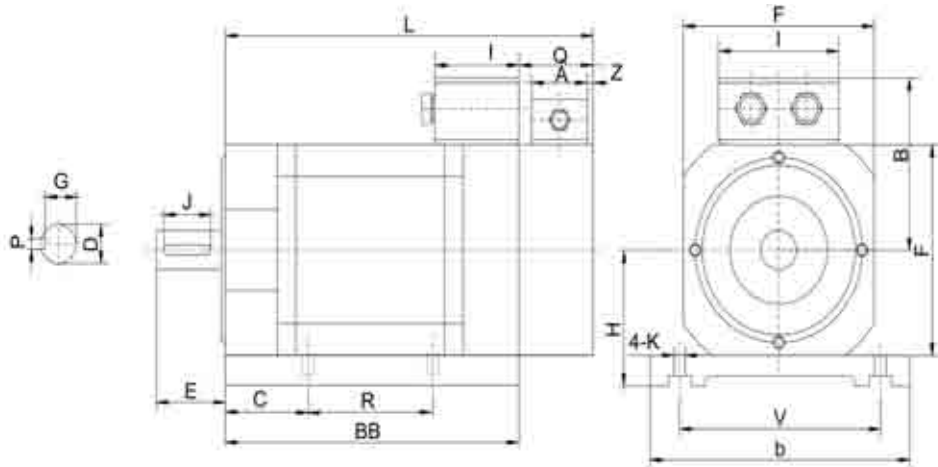
Model	Rated Power(KW)	Rated Speed/min	Rated Frequency (Hz)	Rated Current(A)	Rated Torque(Nm)	Maxi. Speed (r/min)		
						A	B	C
ZJY-F205-3.7-1500 ZJY-132-3.7-1500	3.7	1500	50	8.3	23.6	6000	8000	12000
ZJY-F205-5.5-1500 ZJY-132-5.5-1500	5.5	1500	50	13.7	35.0	6000	8000	12000
ZJY-F205-7.5-1500 ZJY-132-7.5-1500	7.5	1500	50	17.5	47.8	6000	8000	12000
ZJY-F205-2.2-1000 ZJY-132-2.2-1000	2.2	1000	33.3	5.7	21.0	5000	7000	----
ZJY-F205-3.7-1000 ZJY-132-3.7-1000	3.7	1000	33.3	9.3	35.3	5000	7000	----
ZJY-F205-5.5-1000 ZJY-132-5.5-1000	5.5	1000	33.3	14.0	52.5	5000	7000	----

Installation Dimension of Vertical Flange Mounting F205



Model	F205-2.2 -1500	F205-3.7 -1500	F205-5.5 -1500	F205-7.5 -1500	F205-2.2 -1000	F205-3.7 -1000	F205-5.5 -1000
F	205	205	205	205	205	205	205
N	Φ180	Φ180	Φ180	Φ180	Φ180	Φ180	Φ180
T	5	5	5	5	5	5	5
M	Φ215	Φ215	Φ215	Φ215	Φ215	Φ215	Φ215
K	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250	Φ250
S	Φ15	Φ15	Φ15	Φ15	Φ15	Φ15	Φ15
D	Φ38	Φ38	Φ38	Φ38	Φ38	Φ38	Φ38
E	80	80	80	80	80	80	80
G	33	33	33	33	33	33	33
P	10	10	10	10	10	10	10
H	271	271	271	271	271	271	271
L	385	430	460	500	430	460	500
Z	5	5	5	5	5	5	5
B	172	172	172	172	172	172	172
I	130	130	130	130	130	130	130
J	50	50	50	50	50	50	50
A	70	70	70	70	70	70	70
Q	95	95	95	95	95	95	95
Weight (Kg)	50	59	67	76	59	67	76

Installation Dimension of Horizontal Flange Mounting 132

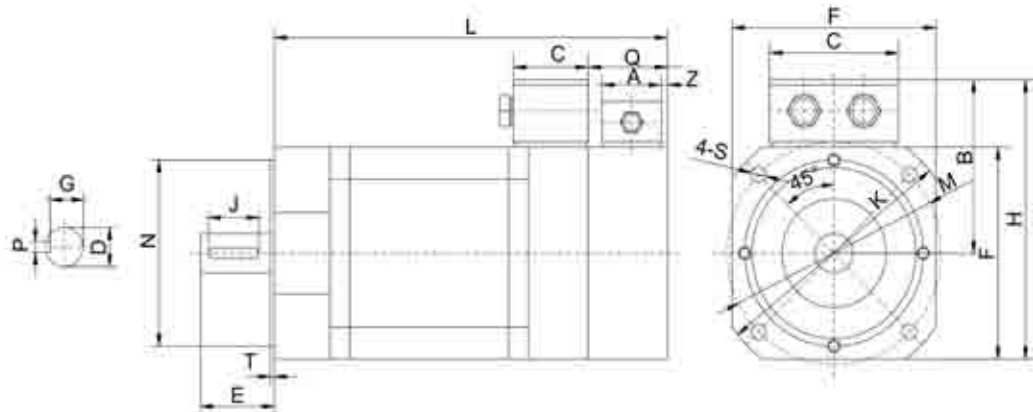


Model	132-2.2-1500	132-3.7-1500	132-5.5-1500	132-7.5-1500	132-2.2-1000	132-3.7-1000	132-5.5-1000
H	132	132	132	132	132	132	132
F	205	205	205	205	205	205	205
BB×b	310×260	310×260	340×260	380×260	310×260	340×260	380×260
R×V	140×216	140×216	140×216	173×216	140×216	140×216	173×216
K	Φ13.5	Φ13.5	Φ13.5	Φ13.5	Φ13.5	Φ13.5	Φ13.5
C	90	90	90	90	90	90	90
D	Φ38	Φ38	Φ38	Φ38	Φ38	Φ38	Φ38
E	80	80	80	80	80	80	80
G	33	33	33	33	33	33	33
P	10	10	10	10	10	10	10
Q	95	95	95	95	95	95	95
I	130	130	130	130	130	130	130
Z	5	5	5	5	5	5	5
B	172	172	172	172	172	172	172
J	50	50	50	50	50	50	50
A	70	70	70	70	70	70	70
L	385	430	460	500	430	460	500
Weight(Kg)	57	67	77	86	67	77	86

Performance Parameters of F270 and 160

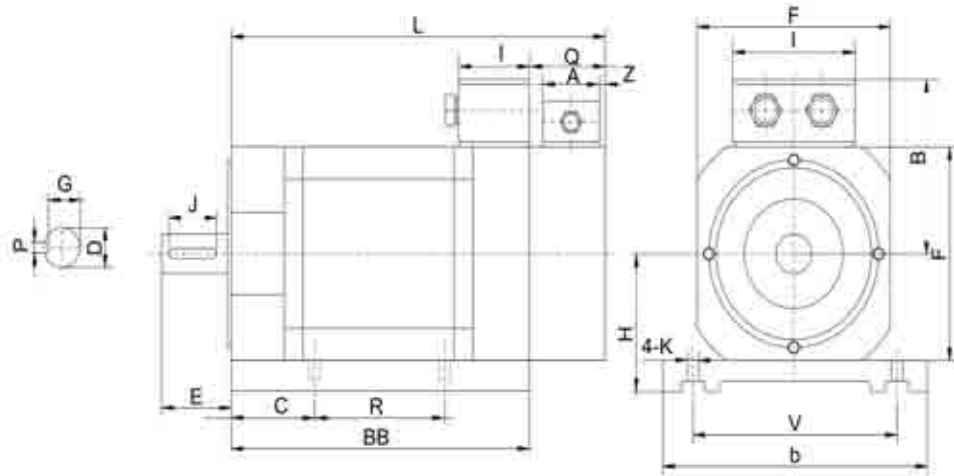
Model	Rated Power(KW)	Rated Speedr/min	Rated Frequency (Hz)	Rated Current(A)	Rated Torque(Nm)	Maxi. Speed (r/min)		
						A	B	C
ZJY-F270-11-1500 ZJY-160-11-1500	11	1500	50	24.0	70.0	4500	6000	8000
ZJY-F270-15-1500 ZJY-160-15-1500	15	1500	50	30.0	95.5	4500	6000	8000
ZJY-F270-18.5-1500 ZJY-160-18.5-1500	18.5	1500	50	37.5	117.8	4000	6000	8000
ZJY-F270-22-1500 ZJY-160-22-1500	22	1500	50	43.0	140.0	3500	6000	8000
ZJY-F270-7.5-1000 ZJY-160-7.5-1000	7.5	1000	33.3	18.5	71.6	4500	6000	-----
ZJY-F270-11-1000 ZJY-160-11-1000	11	1000	33.3	25.5	105.0	4000	6000	-----
ZJY-F270-15-1000 ZJY-160-15-1000	15	1000	33.3	31.5	143.3	3500	6000	-----

Installation Dimension of Vertical Flange Mounting F270



Model	F270-11-1500	F270-15-1500	F270-18.5-1500	F270-22-1500	F270-7.5-1000	F270-11-1000	F270-15-1000
F	270	270	270	270	270	270	270
N	Φ230	Φ230	Φ230	Φ230	Φ230	Φ230	Φ230
T	5	5	5	5	5	5	5
M	Φ265	Φ265	Φ265	Φ265	Φ265	Φ265	Φ265
K	Φ330	Φ330	Φ330	Φ330	Φ330	Φ330	Φ330
S	Φ15	Φ15	Φ15	Φ15	Φ15	Φ15	Φ15
D	Φ48	Φ48	Φ48	Φ48	Φ48	Φ48	Φ48
E	110	110	110	110	110	110	110
G	42.5	42.5	42.5	42.5	42.5	42.5	42.5
P	14	14	14	14	14	14	14
H	336	336	336	336	336	336	336
Q	97	97	97	97	97	97	97
Z	5	5	5	5	5	5	5
B	201	201	201	201	201	201	201
C	130	130	130	130	130	130	130
J	90	90	90	90	90	90	90
A	70	70	70	70	70	70	70
L	480	525	560	600	480	525	600
Weight(Kg)	125	147	157	176	125	147	167

Installation Dimension of Horizontal Flange Mounting 160



Model	160-11 -1500	160-15 -1500	160-18.5 -1500	160-22 -1500	160-7.5 -1000	160-11 -1000	160-15 -1000
H	160	160	160	160	160	160	160
F	270	270	270	270	270	270	270
BB × b	360 × 295	405 × 295	435 × 295	475 × 295	360 × 295	405 × 295	435 × 295
R × V	202 × 254	248 × 254	248 × 254	248 × 254	202 × 254	248 × 254	248 × 254
K	Φ 13.5	Φ 13.5	Φ 13.5	Φ 13.5	Φ 13.5	Φ 13.5	Φ 13.5
C	110	110	110	110	110	110	110
D	Φ 48	Φ 48	Φ 48	Φ 48	Φ 48	Φ 48	Φ 48
E	110	110	110	110	110	110	110
G	42.5	42.5	42.5	42.5	42.5	42.5	42.5
P	14	14	14	14	14	14	14
Q	97	97	97	97	97	97	97
I	130	130	130	130	130	130	130
Z	5	5	5	5	5	5	5
B	205	205	205	205	205	205	205
J	90	90	90	90	90	90	90
A	70	70	70	70	70	70	70
L	480	525	560	600	480	525	600
Weight(Kg)	138	165	175	195	138	165	195

Mechanical Characteristics

————— : Power–torque output in continuous working system

..... : Power–torque output in 30–min working system

Motor model	Power curve	Torque curve	Motor model	Power curve	Torque curve
F205 –3.7 –1500、 132 –3.7 –1500			F205 –2.2 –1000、 132 –2.2 –1000		
FF205 –5.5 –1500、 132 –5.5 –1500			F205 –3.7 –1000、 132 –3.7 –1000		
F205 –7.5 –1500、 132 –7.5 –1500			F205 –5.5 –1000、 132 –5.5 –1000		
F270 –11 –1500、 160 –11 –1500			F270 –7.5 –1000、 160 –7.5 –1000		
F270 –15 –1500、 160 –15 –1500			F270 –11 –1000、 160 –11 –1000		
F270 –18.5 –1500、 160 –18.5 –1500			F270 –15 –1000、 160 –15 –1000		
F270 –22 –1500、 160 –22 –1500					



REMOTE IO MODULE

Product Brief

Remote IO module is used to expand IO points of CNC system. Connecting with CNC system by KSSB servo bus can realize remote communication. Speed of response is faster and working performance is more reliable. Servo bus IO module can also connect traditional non-bus spindle driver, which expands supportable spindle driver range for bus CNC systems.

Model Description

Remote IO Module

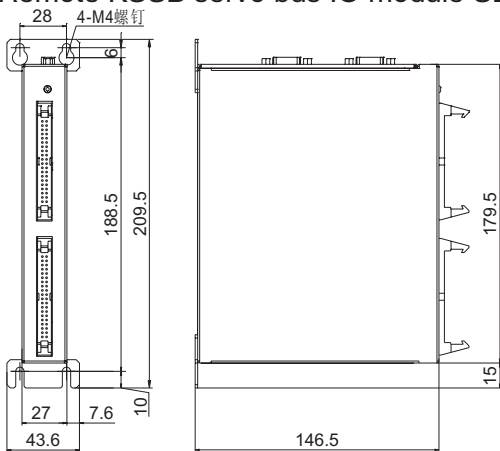
<p>SD 1</p> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> Module subtype mark Please refer to "List of Specification" for details </div> <div style="border: 1px solid black; padding: 5px; margin: 5px;"> Remote KSSB servo bus I/O module type mark </div>	<p>SD1 SD2 SD3 SD4 SD5</p> 	<p>Deconcentrator board</p> 
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List of Specification

Name	Specification				
	SD1	SD2	SD3	SD4	SD5
Digital input (points)	32	64	32	48	40
Digital output (points)	32	64	32	40	32
Analog input (ways)	Resolution: 8-bit AD conversion; Input range: 0~+10V or 4~20mA				
	---	---	2	2	4
Analog output (ways)	Resolution: 12-bit; Output voltage: 0~+10V				
	---	---	1	1	4
Analog spindle (ways)			1	1	---
Digit spindle				1 way	---
Spindle encoder				1 way	---
Control mode	Servo bus (KSSB)				
Power supply	+24V DC				

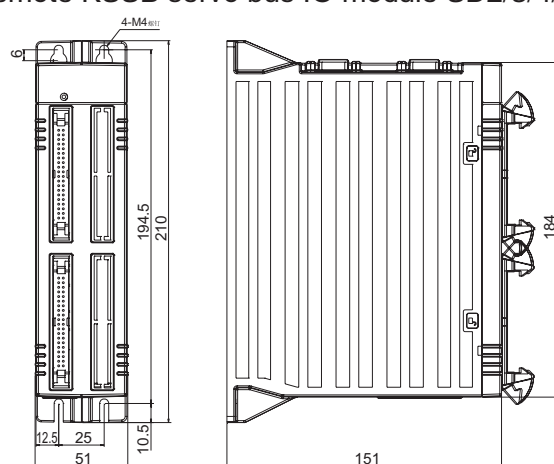
Module Profile and Installation Dimensions

Remote KSSB servo bus IO module SD1



Remote IO module –SD1 installation dimension

Remote KSSB servo bus IO module SD2/3/4/5



Remote IO module–SD2/SD3/SD4/SD5 installation dimension
Note: Installation dimensions of remote servo bus IO modules SD2~SD5 are same as each other. Figure above takes SD2 module for an example.

SALES NETWORK OF KND CNC (GROUP) CO.

★ Domestic Sales and Service Network

Beijing KND CNC Technique Co., Ltd. (Headquarter)

Address : 3~5 Building, 11th Block, ABP. 188th, West Road, South 4th Ring, Fengtai District, Beijing 100070, China

Tel : 010-63701999 (Centre)

Fax : 010-63701998

★ Overseas Sales Network

Taiwan Sales Agent: ACTIVE AUTOMATION INT-LENTERPRISE CO., Ltd

Address : No.91, Ligong Rd, Taiping City, Taichung Country 411, Taiwan

Tel : 00886-4-23951422

Fax : 00886-4-23950774

India Sales Agent: GURU KAIJI PVT.LTD.

Address : WZ-13B Ground Floor,Vashisht Park, Pankha Road, New Delhi,India-110046

Tel : +91-8860673939

Thailand Sales Agent: SIAM STAR TECH CO., LTD

Address : 111 Soi Bangkadee 25 Ramaii Samedarm Bangkhunthiem, Bangkok,10150,THAILAND

Tel : +66-28964848

Fax : +66-28962756

Service Network of KND CNC (Group) Company

Since 2002, KND has gradually set up subsidiaries, representative offices and service centers at different places all over China; established special service hotlines to provide technical support and service to users, and has set up good cooperation with machine builders to serve the customers in an excellent, efficient and rapid way.

1. Domestic service departments: Beijing (Headquarter), Ningbo, Guangzhou and Nantong
2. Domestic service centers: Beijing, Tianjin, Chongqing, Cangzhou, Qingdao, Jinan, Yantai, Weifang, Liaocheng, Tengzhou, Zhengzhou, Wuhan, Xi' an, Shenyang, Baoji, Chengdu, Wuxi, Dezhou, Shijiazhuang, Nantong, Yancheng, Jiaxing, Ninghai, Shanghai, Hangzhou, Yuhuan, Luqiao, Wenzhou, Yongkang, Yuyao, Dongguan, Wuhu, Quanzhou, Foshan, Zhongshan, Fuzhou, Shunde, Shenzhen, Fanyu, Liuzhou, Xiamen, Nanchang and Taizhou
3. Overseas service department distribution place: India, Thailand, Taiwan

Service Network OF KND CNC (GROUP) CO.)

KND Service hotline: 4006 010 326 +86-13911354380 (International)

Complaint Hotline

Complaint hotline : 010-63702892

Fax : 010-63705972

Working time : Monday to Friday A.M. 9: 00-12: 00 P.M. 13: 00-17: 00

KND Service Department Contact Information

Beijing service department (Headquarter)

Address : 3~5 Building, 11th Block, ABP. 188th, West Road, South 4th Ring, Fengtai District, Beijing, China

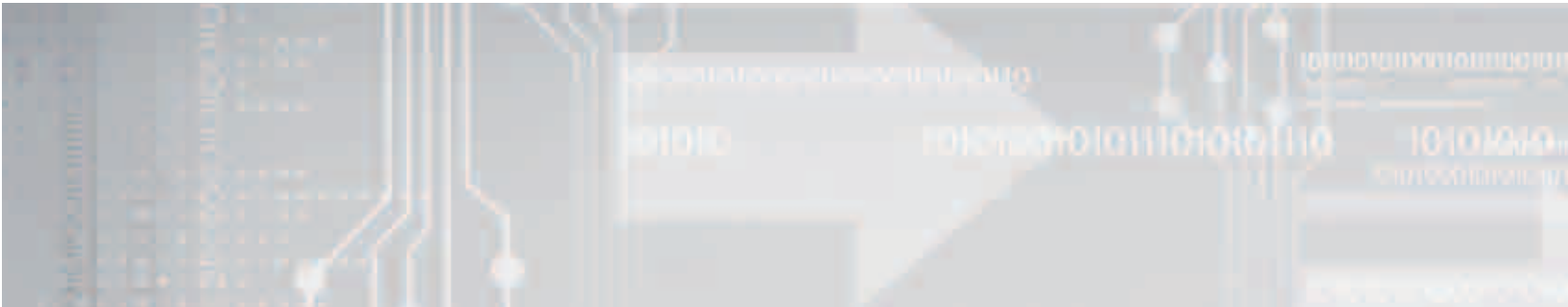
Post code : 100070

Tel : 010-63701983

Fax : 010-63705972

Service Network Distribution Map





Beijing KND CNC Technique Co., Ltd.(Headquarters)

Address : 3-5 Building, 11th Block, ABP. 188th, West Road,
South 4th Ring, Fengtai District, Beijing,100070,China

Tel : 010-63701999 (Centre)

Fax : 86-10-63701998

Sales : 86-10-63701981

Service : 4006 010 326

E-mail : bj@knd.com.cn

Website : <http://www.knd.com.cn>

Product information in this manual will
change with updating product.

If there is any questions, please contact
KND for details.

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