

# KNC-PKS-FD114S-005 - Servo System



FEATURES

- 24-70VDC
- Rated Torque of 23 oz-in
- Power Ratings up to 50 Watts
- 16 Bit Single-Turn Magnetic Encoder
- Maximum Speed of 3942 RPM
- IP65 for Body, IP54 Shaft Seal
- Brake Option Available
- Position, Speed, and Torque Control
- RS232 and RS485 Port



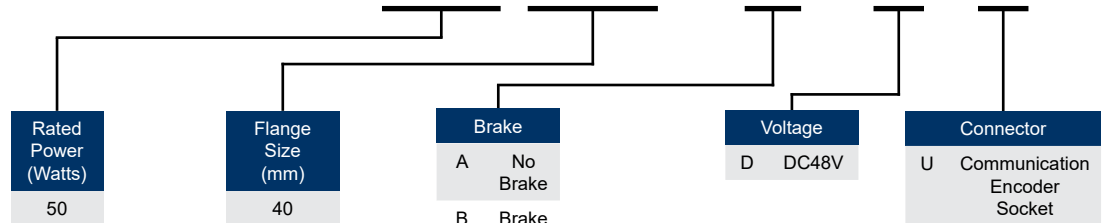
DESCRIPTION

The KNC-PKS-FD114S-005 Servo System includes a 50 Watt KNC-SRV-SMC40S-0005-30MAK-5DSU Servo Motor or KNC-SRV-SMC40S-0005-30MBK-5DSU Servo Motor with brake, operated by the KNC-SRV-FD114S-LB-000 Servo Drive. These packages are ideal and provide easy start-ups, convenience, and performance. The Servo Motors included in these packages provide torque up to 68 oz-in. The KNC-SRV-FD114S-LB-000 Servo Drive is designed to switch dynamically among different control methods for more flexible operation and can operate position control mode either with pulse and direction inputs, 8 internal position points, or 8 internal speed points. Each system includes a 5m Motor Power Cable, 5m Encoder Cable and a Communication cable. If purchasing the option with a Brake then a 5m Brake Cable will be included as well.

Item	Rated Voltage (VDC)	Rated Speed (RPM)	Rated Torque (oz-in)	Rated Current (Arms)	Inertia (oz-in-sec <sup>2</sup> )	Torque Constant KT (oz-in/A)	Resistance (ohms)	Inductance (mH)	Brake (24VDC)	Motor Length (mm)	Shaft Diameter (mm)
KNC-PKS-FD114S-005-40S-MAK-DSU	24-70	3000	23	1.5	0.00025	15.6	4.1	4.5	No	74.6	8
KNC-PKS-FD114S-005-40S-MBK-DSU	24-70	3000	23	1.5	0.0003	15.6	4.1	4.5	Yes	104.6	8

ORDERING INFORMATION

## KNC-PKS-FD114S-005-40S-MAK-DSU



L011826

# KNC-SRV-SMC40S-0005 Motor Specifications



## FEATURES

- 24-70VDC
- 50W Power Rating
- Rated Torque of 23 oz-in
- Maximum Speed of 3942 RPM
- 16 Bit Single-Turn Magnetic Encoder
- IP65 for Body, IP54 Shaft Seal
- Insulation Class F
- Brake Option Available

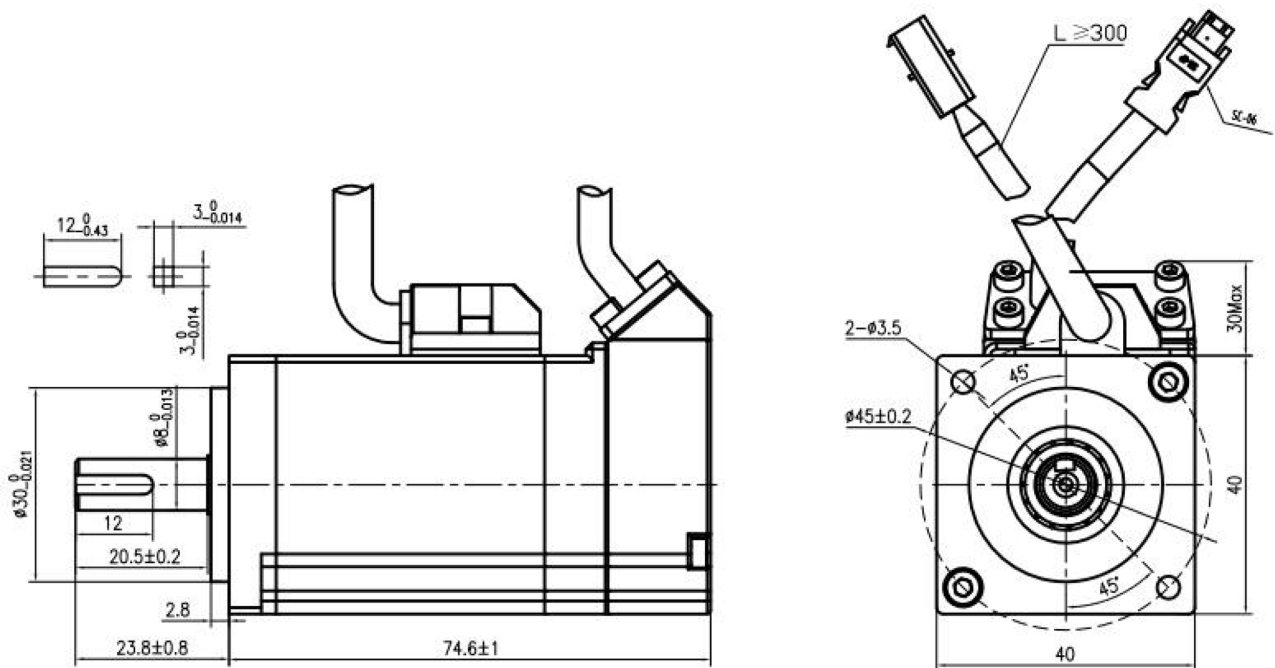


## SPECS

Item	Rated Torque (oz-in)	Rated Power (Watts)	Rated Speed (rpm)	Rated Current (Arms)	Inertia (oz-in-sec <sup>2</sup> )	Torque Constant KT (oz-in/A)	Resistance (ohms)	Inductance (mH)	Length (mm)	Weight (lbs)
KNC-SRV-SMC40S-0005-30MAK-5DSU	23	50	3000	1.5	0.00025	15.6	4.1	4.5	74.6	0.88
KNC-SRV-SMC40S-0005-30MBK-5DSU	23	50	3000	1.5	0.0003	15.6	4.1	4.5	104.6	1.32

## DIMENSIONS

KNC-SRV-SMC40S-0005-30MAK-5DSU



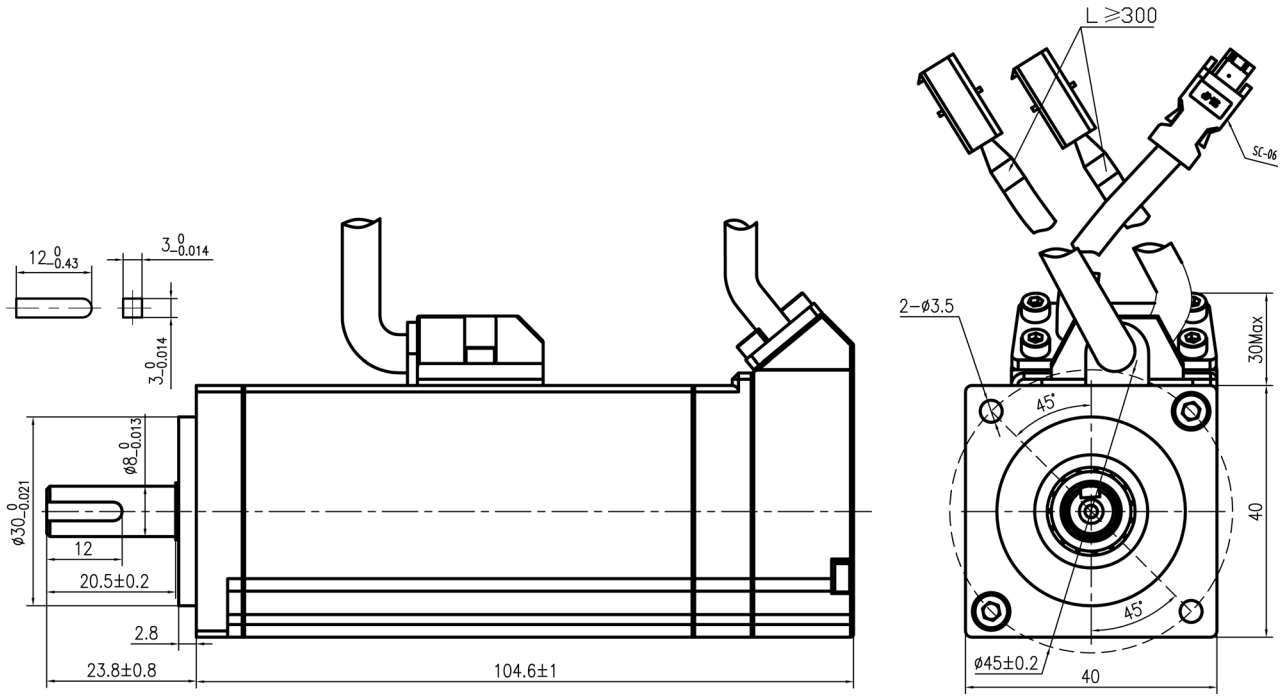
Dimensions are in mm

# KNC-SRV-SMC40S-0005 Motor Specifications



DIMENSIONS

KNC-SRV-SMC40S-0005-30MBK-5DSU

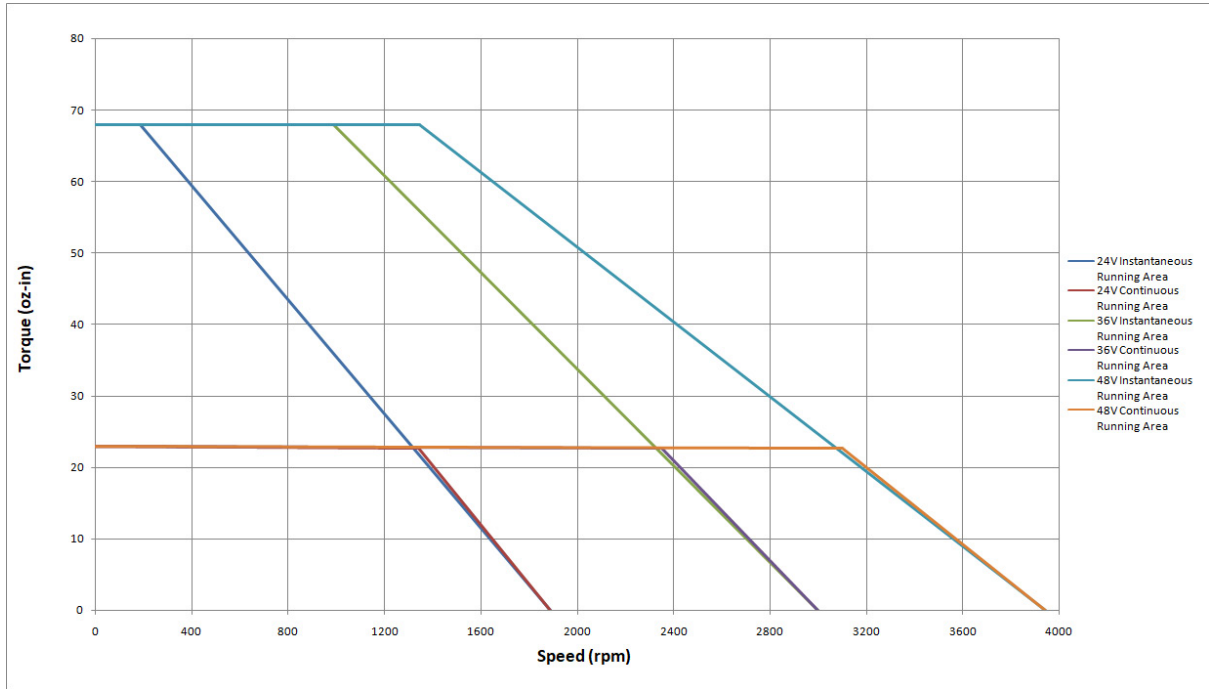


Dimensions are in mm

# KNC-SRV-SMC40S-0005 Motor Specifications



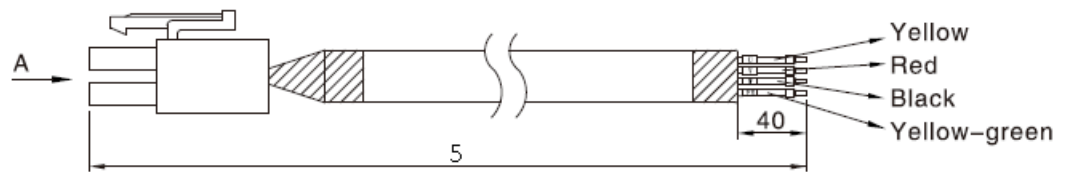
TORQUE CURVE



Motor Cable: KNC-SRV-MOT-005-05-KL-D for KNC-SRV-SMC40S-0005-30MAK-5DSU and KNC-SRV-SMC40S-0005-30MBK-5DSU

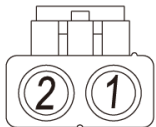


A  
4PIN

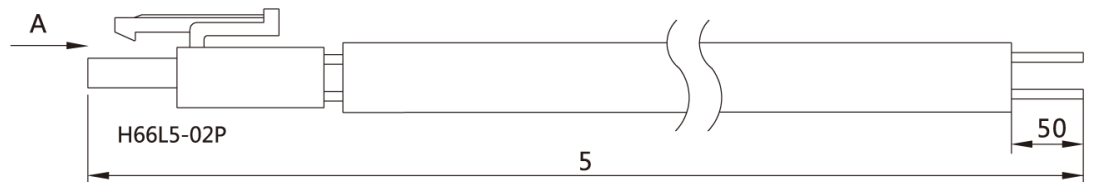


KNC-SRV-MOT-005-05-KL-D		
Cable Color	Signal	PIN #
Yellow	U	PIN 1
Red	V	PIN 2
Black	W	PIN 3
Yellow-green	PE	PIN 4

Brake Cable: KNC-SRV-BRA-05-KL for KNC-SRV-SMC40S-0005-30MBK-5DSU



A  
2PIN



KNC-SRV-BRA-05-KL		
Cable Color	Signal	PIN #
Red	Brake +	PIN 1
Blue	Brake -	PIN 2

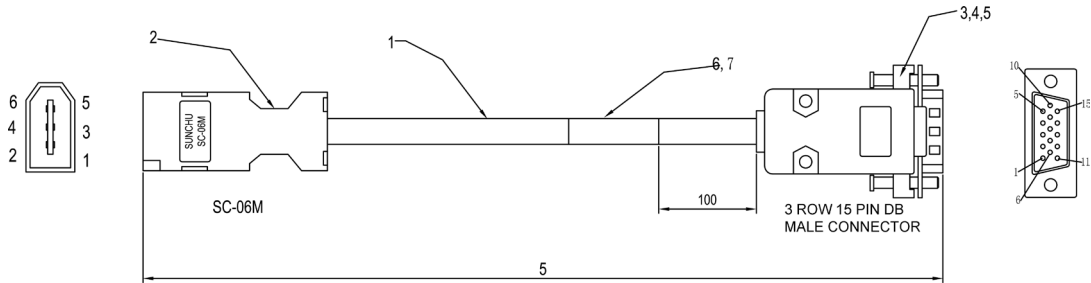
WIRING PINOUTS

# KNC-SRV-SMC40S-0005 Motor Specifications



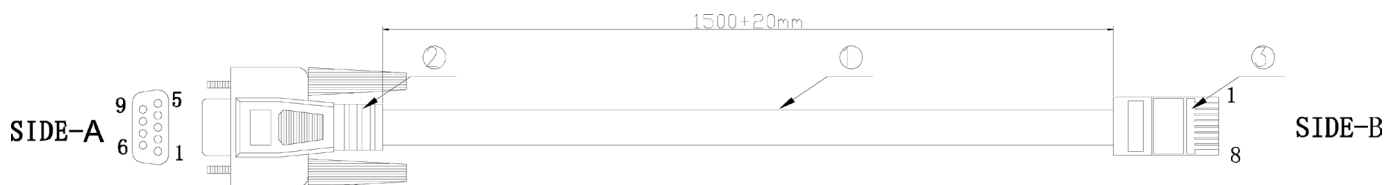
WIRING PINOUTS

Encoder Cable: KNC-SRV-ENCHG-05-GU for KNC-SRV-SMC40S-0005-30MAK-5DSU and KNC-SRV-SMC40S-0005-30MBK-5DSU



KNC-SRV-ENCHG-05-GU				
Wiring Cable	Color	Signal 1	Signal 2	DB15
PIN 1	Red	VDD	VDD	PIN1
PIN 2	Black	GND	GND	PIN2
PIN 3	Brown	MA_P+	\	PIN10
PIN 4	Blue	MA_N-	\	PIN15
PIN 5	Yellow	SLO_P+	SD	PIN9
PIN 6	Green	SLO_N-	/SD	PIN14
SHELL	SHIELD	SHIELD	SHIELD	SHELL

Communication Cable: KNC-SRV-RS-232-RJ45 for KNC-SRV-SMC40S-0005-30MAK-5DSU & KNC-SRV-SMC40S-0005-30MBK-5DSU



KNC-SRV-RS-232-RJ45							
	2	3	4	5	6	7	8
SIDE-A	2	3	4	5	6	7	8
SIDE-B	3	6	7	4	5	2	8

# KNC-SRV-FD114S-LB-000 Driver Specifications

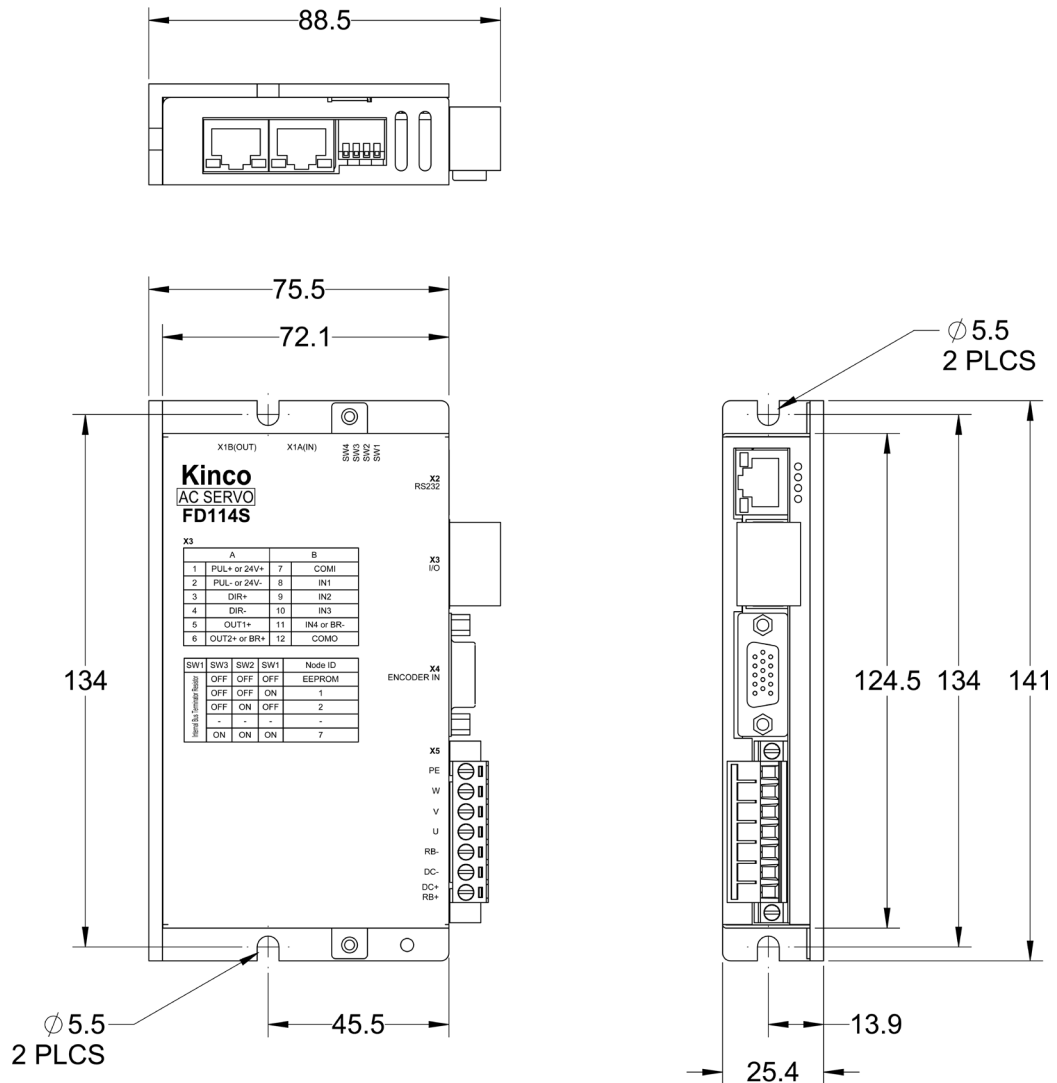


## FEATURES

- 24-70VDC
- Rated Current is (RMS) 5A
- 50-100 Watt Rated Power Range
- Position, Speed, and Torque Control
- RS232 and RS485 Port
- Natural Air Cooling
- MODBUS RTU or Pulse and Direction
- Supports Incremental or 16-Bit Absolute Encoders
- Communication Software
  - Configure Parameters
  - I/O Signal Monitoring
  - Speed and Position Curves
  - Gain Adjustments
- Programmable Inputs and Outputs
  - 3 Inputs
  - 2 Outputs (1 Standard & 1 for Brake)
- CE Certified



## DIMENSIONS

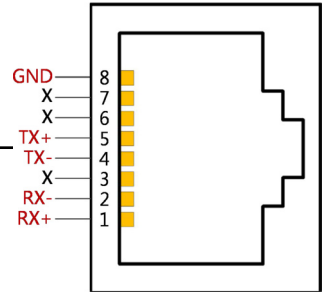


Dimensions are in mm

**RS485 Port**

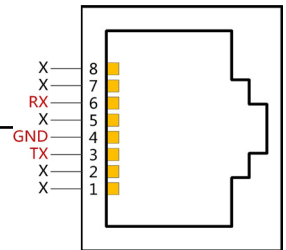
PIN Number	Signal
8	GND
7	NC
6	NC
5	TX+
4	TX-
3	NC
2	RX-
1	RX+

RS485 Bus Communication Port ————— X1


**RS232 Port**

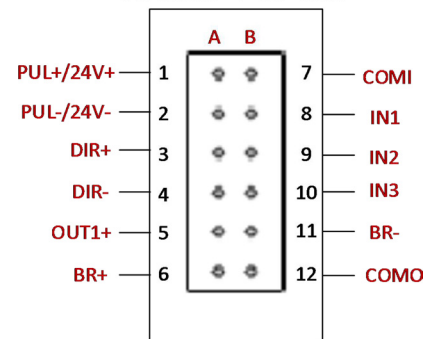
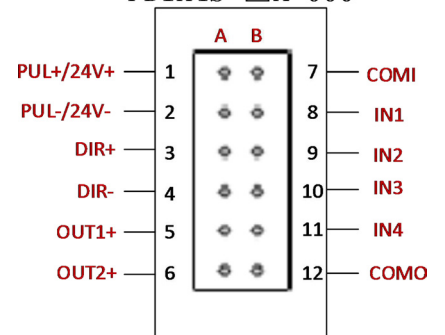
PIN Number	Signal
3	TX
4	GND
6	RX
Others	NC

RS232 Communication Interface, Can be Used for Debugging and Import/Export Project Data Via PC ————— X2


**External Input & Output**

PIN No.	Signal	PIN No.	Signal
1	PUL+	7	COMI
2	PUL-	8	IN1
3	DIR+	9	IN2
4	DIR-	10	IN3
5	OUT1+	11	IN4 / BR-
6	OUT2+ / BR+	12	COMO

Digital Input/Output Terminals ————— X3

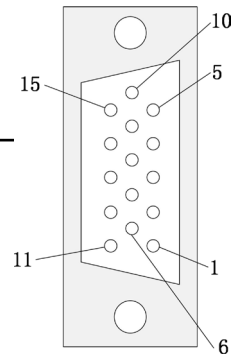
**FD1X4S-□B-000**

**FD1X4S-□A-000**


### Motor with Incremental Encoder

PIN No.	Signal	PIN No.	Signal
1	GND	9	5V+
2	/A	10	A
3	/B	11	B
4	/Z	12	Z
5	/U	13	U
6	/V	14	V
7	/W	15	W
8	PE	16	-

Motor Encoder Input Interface

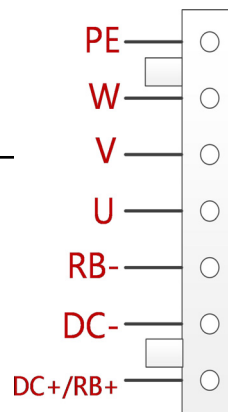
X4



### Motor/Power Supply

PIN Name	PIN Function
PE	Servo Motor UVW phase out and motor ground
W	
V	
U	
RB-	External brake resistor input
DC-	Driver power input negative
DC+ / RB+	Driver power input positive
RB+	External brake resistor input

X5





Model Parameter		KNC-SRV-FD114S Series
Power	Main Supply Voltage	24VDC-70VDC
	Control Circuit Voltage	DC24V 1A (Optional)
Current	Rated Current (RMS)	5Arms
	Peak Current (PEAK)	8A
Feedback Signal		5V Incremental Differential Encoder 16-Bit Single-Turn Magnetic Encoder
Brake Chopper		Via Wiring an External Braking Resistor (Mainly in Quick Start and Stop Application). Brake Chopper Threshold is 73V (Adjustable via Software)
Brake Chopper Threshold		DC73V $\pm$ 2V (Default Value, Adjustable via Software)
Over-Voltage Alarming Threshold		DC83V $\pm$ 2V
Under-Voltage Alarming Threshold		18V $\pm$ 2V
Cooling Method		Natural Air Cooling Note: External Heatsink is Required when the Rated Current of FD114S, FD134S and FD144S Should be Bigger than 12Arms, 20Arms and 30Arms Respectively. The Size of External Heatsink is 300mm*300mm*10mm in Length*Width*Height
Weight		1.1 lbs
Digital Input	Input Specification	3 Digital Inputs, with COM1 Terminal for PNP (High Level Valid 12.5-30V) or NPN (Low Level Valid 0-5V) Connection, Suitable to FD1x4S-LB-000 4 Digital Inputs, with COM1 Terminal for PNP (High Level Valid 12.5-30V) or NPN (Low Level Valid 0-5V) Connection, Suitable to FD1x4S-LA-000
	Input Function	Define Freely According to Requirement, Supporting Following Functions: Driver Enable, Driver Fault Reset, Driver Mode Control, Speed Loop Proportional Control, Positive Limit, Negative Limit, Homing Signal, Reverse Command, Internal Speed Section Control, Internal Positive Section Control, Quick Stop, Start Homing, Active Command, Switch Electronic Gear Ratio, Switch Gain.
Digital Output	Output Specification	1 - Way Digital Output without 1 Driving Capacity of 100 ma or (BR+/BR-) can Directly Drive the Standard Brake Motor for FD1x4S-LB-000, Please Refer to the Wiring Port for Details. 2 - Way Digital Output without 1 Driving Capacity of 100 ma, Suitable for FD1x4S-LA-000.
	Pulse Direction Output	Pulse + Direction, CCW+CW, Phase A+Phase B (5V~24V) Note, only FD1x4-Lx-000 Support this Function
	Output Function	Define Freely According to Requirement, Supporting Following Functions: Driver Ready, Driver Fault, Position Reached, Motor at Zero Speed, Motor Brake, Motor Speed Reached, Z Signal, Maximum Speed Obtained in Torque Mode, Motor Brake, Position Limiting, Reference Found.
	RS232	Default Baudrate Setting is 38400, the Max. Baudrate is 115.2KHz, use Kinco Software to Communicate with PC, or via Free Protocol to Communicate with Controller.
	Protection Function	Over-Voltage Protection, Under-Voltage Protection, Motor Over-Heat Protection (I <sup>2</sup> T), Short-Circuit Protection, Drive Over-Heat Protection, Etc.
Modbus / RS485		The Max. Baudrate is 115.2KHz, use Modbus RTU Protocol to Communicate with Controller.
CAN BUS		Support Maximum 1MHz Baudrate. Communicate with Controller via CANopen Protocol
Ethercat		Support CoE(CiA402 Protocol) and CSP/CSV/PP/PV/PT/HM Mode, Communication Speed 100M

### Compatible Drivers

Part Number	Description
KNC-SRV-FD114S-LB-000	Servo Driver



### Compatible Motors

Part Number	Description
KNC-SRV-SMC40S-0005-30MAK-5DSU	Servo Motor
KNC-SRV-SMC40S-0005-30MBK-5DSU	Servo Motor



### Compatible Cables

Part Number	Description
KNC-SRV-MOT-005-05-KL-D	Power Cable
KNC-SRV-ENCHG-05-GU	Encoder Cable
KNC-SRV-BRA-05-KL	Brake Cable
KNC-SRV-RS-232-RJ45	Communication Cable

