LPK Series

— Pancake Slip Rings

LPK series is a group of Pancake Slip Rings manufactured by JINPAT with the thickness as thin as 6mm. They are designed exclusively for rotation systems in which installing space is limited in height at vertical direction. Both separate and stand-alone pancake electrical slip rings are available. Reliable contact and ultra-low electrical noise of the light slip ring, together with a high rotating speed are the notable characteristics. They are proven to be of qualified products, secured by the full-fledged quality control center. Moreover, such pancake units for encoder are equipped with ready-made photoelectric encoders. Moreover, they can stand the wet calorific test. 360° rotating transmission without surge kind of interference or data package loss wins the customers' recognition.

JINPAT
Electronics
Since 1996

Parameters

Electric & Electronic	
Current Rating	20A (max)
Voltage Rating	380VAC
Dielectric Strength	≥1000VDC@50Hz
Insulation	500MΩ@500VDC
Electrical Noise	70mΩ
Signal Compatible	Ethernet, USB, CANBUS, FireWire

Mechanical	
Working Speed	0~300RPM
Inner Diameter	820mm (max)
Contact	Precious Metal
Wire Size	AWG22#/14#/16#/17#/26#/28#/30#/32# Teflon®
Wire Length	Customizable

Environment	
Temperature	-20°C~+60°C
Humidity	60%RH
IP	IP54

Life
≥5 million turns

* Life test was done under JINPAT laboratory condition.

* For any request beyond specification above, please feel free to contact us.

Features & Advantages

- Transmitting analog / data signal, compatible with data bus protocol
- 360° continuous roatating transmission
- High rotating precision, reliable performance
- Low friction force, low contact resistance, no friction debris
- Small thickness, easy to install
- Optional circuits and current, custom solution
- Long service life
- Mass production, rapid delivery

Superior PCB board

Precise contact

Finish test

Accurate track width and distance

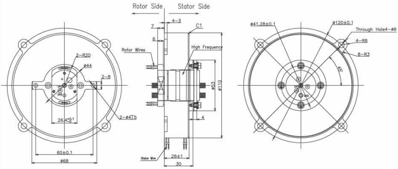
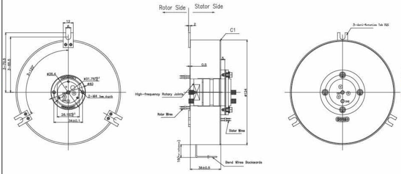
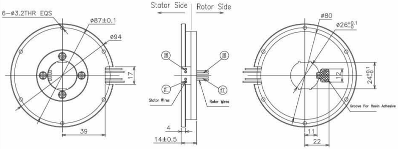
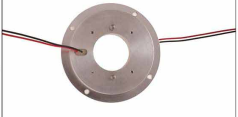
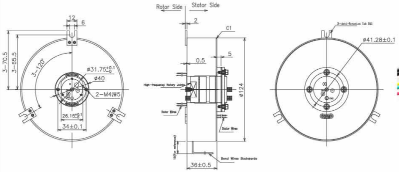
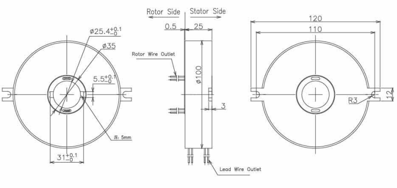
Application

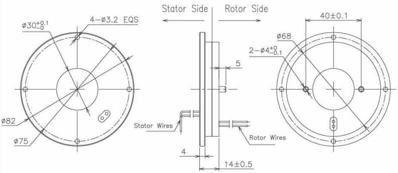
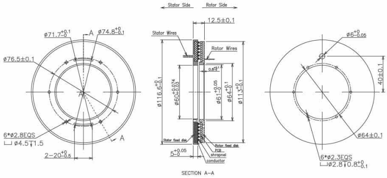
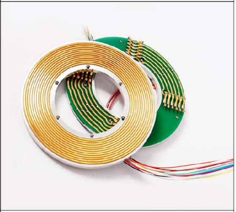
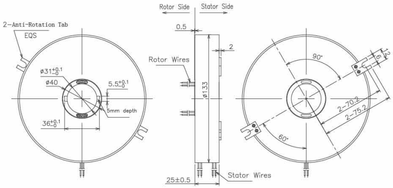
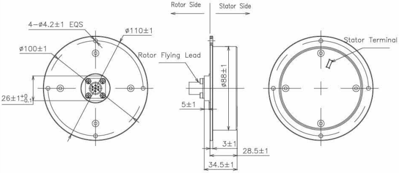
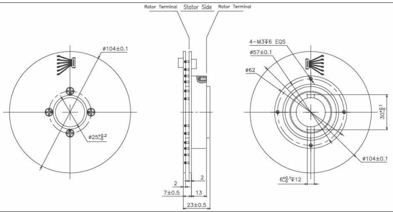
LED Showcase

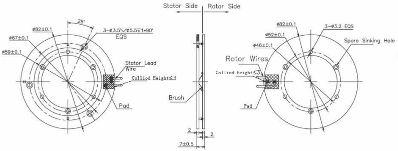
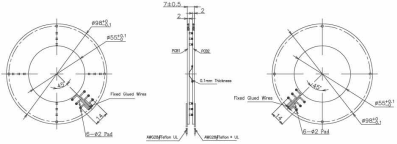
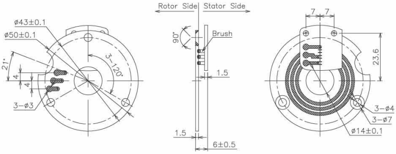
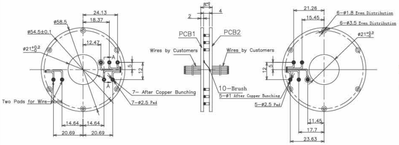
Ferris Wheel

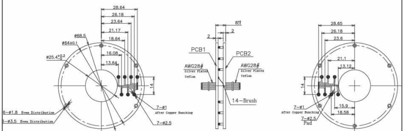
Gyroscope

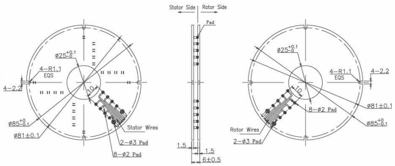
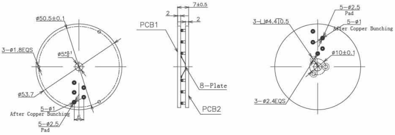
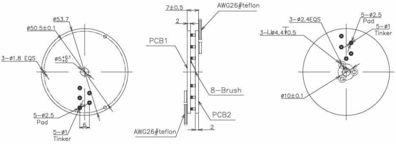
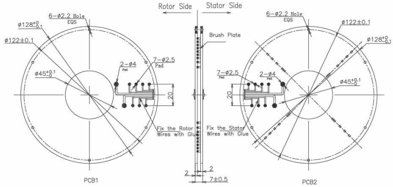
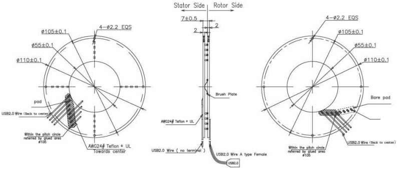
Revolving Door

Model	Outline drawing	Product
LPK000-0405-01E2	 Rotor Side Stator Side 4–3 7 6 C1 Rotor Wires High Frequency 2–R20 ø44 2–8 2–ø4↧5 $26.4^{+0.1}_{0}$ 60±0.1 ø68 ø53 ø110 4 Stator Wire 26±1 30 ø41.28±0.1 ø120±0.1 Through Hole4–ø6 4–R6 8–R3 45°	
LPK000-0220-08S-E2	 12 3–70.5 3–65.5 3–120° ø36.4 $ø31.75^{+0.1}_{0}$ ø40 2–M4 5mm depth $28.15^{+0.1}_{0}$ 34±0.1 Rotor Side Stator Side 2 C1 0.5 5 High-frequency Rotary Joints Rotor Wires ø124 Stator Wires 150(for reference) 36±0.5 Bend Wires Backwards 3–Anti-Rotation Tab EQS	
LPK024-0207	 6–ø3.2THR EQS ø87±0.1 ø94 17 39 Stator Side Rotor Side 黑 红 Stator Wires Rotor Wires 4 14±0.5 ø80 $ø26^{+0.1}_{0}$ 12 $24^{+0.1}_{0}$ Groove For Resin Adhesive 11 22	
LPK000-0410-08S-E2	 12 6 3–70.5 3–65.5 3–120° $ø31.75^{+0.1}_{0}$ ø40 2–M4深5 $26.15^{+0.1}_{0}$ 34±0.1 Rotor Side Stator Side 2 C1 0.5 5 High-frequency Rotary Joints Rotor Wires ø124 Stator Wires 150(for reference) 36±0.5 Bend Wires Backwards 3–Anti-Rotation Tab EQS ø41.28±0.1	
LPK025-0405-0802	 $ø25.4^{+0.1}_{0}$ ø35 $5.5^{+0.1}_{0}$ 深: 5mm $31^{+0.1}_{0}$ Rotor Side Stator Side 0.5 25 Rotor Wire Outlet ø100 3 Lead Wire Outlet 120 110 R3 12	

LPK030-0204	 Stator Side Rotor Side ø30$^{+0.1}_{-0}$ 4-ø3.2 EQS 40±0.1 ø68 2-ø4$^{+0}_{-0.1}$ 5 ø82 ø75 Stator Wires Rotor Wires 4 14±0.5	
LPK060-0803-04S	 Stator Side Rotor Side 12.5±0.1 ø71.7$^{+0.1}_{-0}$ A ø74.8$^{+0}_{-0.1}$ Stator Wires Rotor Wires ø6$^{+0}_{-0.05}$ ø76.5±0.1 ø116.6$^{+0}_{-0.1}$ ø60$^{+0.074}_{+0.03}$ ø61$^{+0.05}_{-0}$ ø64$^{+0}_{-0.1}$ ø113$^{+0}_{-0.1}$ 40±0.1 6*ø2.8EQS ⌴ ø4.5↧1.5 2-20$^{+0}_{-0.5}$ Stator fixed disk Rotor fixed disk PCB shrapnel conductor 5$^{+0.05}_{-0}$ SECTION A-A ø64±0.1 6*ø2.3EQS ⌴ø2.8↧0.8$^{+0}_{-0.1}$	
LPK031-0410-09S	 Rotor Side Stator Side 2-Anti-Rotation Tab EQS 0.5 2 Rotor Wires ø31$^{+0.1}_{-0}$ ø40 5.5$^{+0.1}_{-0}$ 5mm depth 36$^{+0.1}_{-0}$ ø133 90° 12 6 2-70.2 2-75.2 60° 25±0.5 Stator Wires	
LPK000-0602	 Rotor Side Stator Side 4-ø4.2±1 EQS ø110±1 ø100±1 Rotor Flying Lead Stator Terminal 26±1$^{+0}_{-0.1}$ ø88±1 5±1 3±1 28.5±1 34.5±1	
LPK025-0602	 Rotor Terminal Stator Side Rotor Terminal ø104±0.1 4-M3↧6 EQS ø57±0.1 ø62 ø25$^{+0.2}_{-0}$ 30$^{+0.1}_{-0}$ ø104±0.1 2 2 7±0.5 13 23±0.5 6$^{+0.1}_{-0}$↧12	

LPKS046-0205	 Stator Side Rotor Side 25° ø82±0.1 ø67±0.1 ø59±0.1 3−ø3.5∨ø5.5↧1∗90° EQS Stator Lead Wire Colliod Height≤3 Pad Brush 2 2 7±0.5 ø82±0.1 3−ø3.2 EQS ø52±0.1 ø46±0.1 Spare Sinking Hole Rotor Wires Colliod Height≤3 Pad	
LPKS055-0602	 ø98+0 −0.1 ø55+0.1 −0 45° Fixed Glued Wires 14 6−ø2 Pad 7±0.5 2 2 PCB1 PCB2 0.1mm Thickness AWG28#Teflon UL AWG28#Teflon ∗ UL Fixed Glued Wires 45° ø55+0.1 −0 14 ø98+0 −0.1 6−ø2 Pad	
LPKS014-0302	 ø43±0.1 ø50±0.1 21° 4 4 3−120° 3−ø3 Rotor Side Stator Side 90° Brush 1.5 1.5 6±0.5 7 7 23.6 3−ø4 3−ø7 ø14±0.1	
LPKS025-0501	 24.13 18.37 ø58.5 ø54.5±0.1 12.47 ø21+0.2 −0 A A 5 12 7− After Copper Bunching 7−ø2.5 Pad Two Pads for Wire-bond 14.64 14.64 20.69 20.69 8+0 4 2 PCB1 PCB2 Wires by Customers Wires by Customers 10−Brush 5−ø1 After Copper Bunching 21.26 15.45 6−ø1.8 Even Distribution 6−ø3.5 Even Distribution ø21+0.2 −0 5 12 5−ø2.5 Pad 11.45 17.7 23.63	

LPKS025-0701	 28.64 26.18 23.64 21.17 18.64 16.08 13.64 ø68.5 ø64±0.1 ø25.4+0.2 −0 14 6−ø1.8 Even Distribution 6−ø3.5 Even Distribution 7−ø1 After Copper Bunching 7−ø2.5 8+0 2 2 PCB1 PCB2 AWG28# Silver Plated Teflon AWG28# Silver Plated Teflon 14−Brush 28.65 26.18 23.6 21.1 13.12 14 7−ø1 After Copper Bunching 7−ø2.5 Pad 15.9 18.58	

LPKS025-085-0205-08S		
LPKS005-0502		
LPKS005-0502		
LPKS045-0210-07S		
LPKS055-0402-U2		

Stator Side
Rotor Side
Pad
ø25+0.1 -0
4-R1.1 EQS
4-2.2
10
ø85+0 -0.1
ø81±0.1
Stator Wires
2-ø3 Pad
8-ø2 Pad
Rotor Wires
1.5
6±0.5

LPKS005-0502-PCB2
2013-03-26

ø50.5±0.1
3-ø1.8EQS
ø5+0.1 -0
ø53.7
5-ø1 After Copper Bunching
5-ø2.5 Pad
7±0.5
2
PCB1
8-Plate
PCB2
3-⌴ø4.4↧0.5
5-ø2.5 Pad
5-ø1 After Copper Bunching
ø10±0.1
3-ø2.4EQS

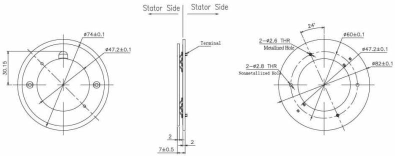
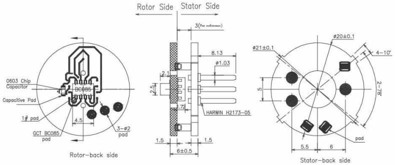
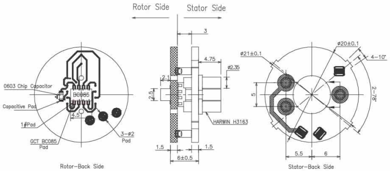
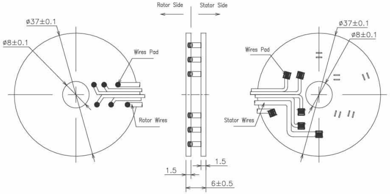
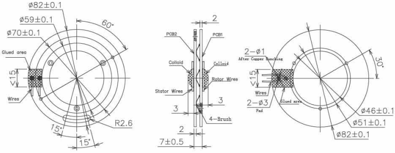
LPKS005-0502-PCB2
2013-03-26

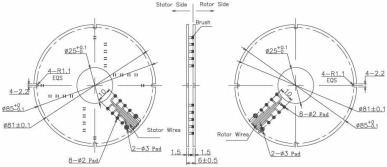
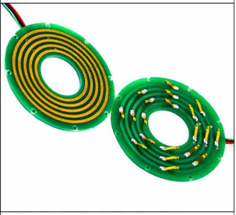
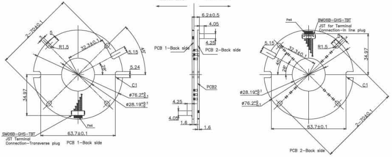
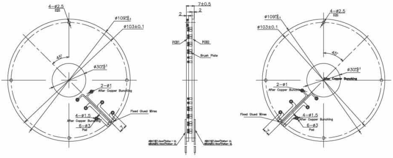
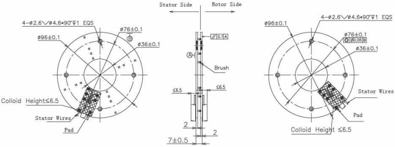
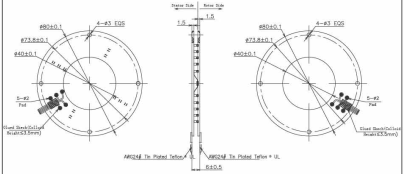
ø53.7
ø50.5±0.1
3-ø1.8 EQS
ø5+0.1 -0
5-ø2.5 Pad
5-ø1 Tinker
6
7±0.5
2
AWG26#teflon
PCB1
8-Brush
PCB2
3-ø2.4EQS
3-⌴ø4.4↧0.5
5-ø2.5 Pad
5-ø1 Tinker
ø10±0.1

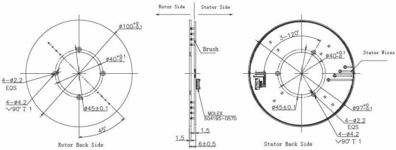
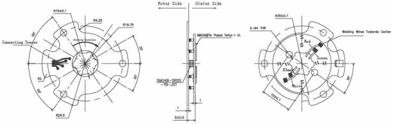
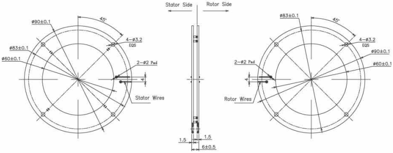
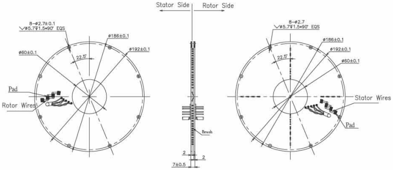
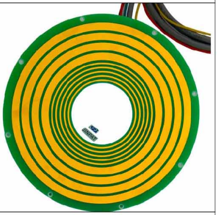
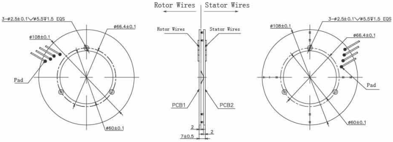
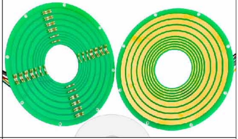
LPKS005-0502-PCB2
2013-03-26

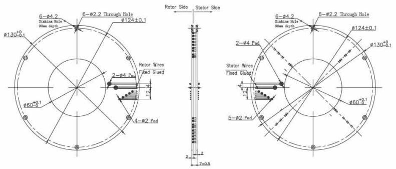
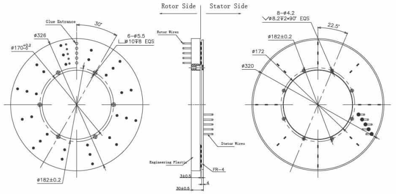
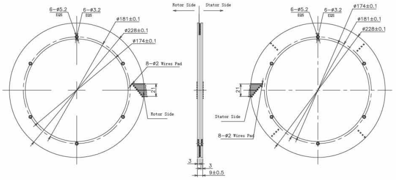
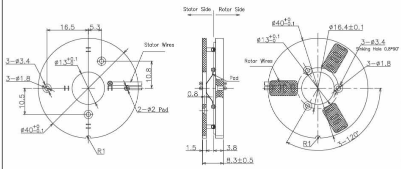
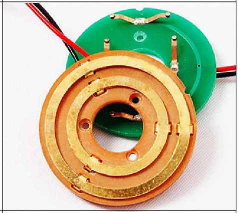
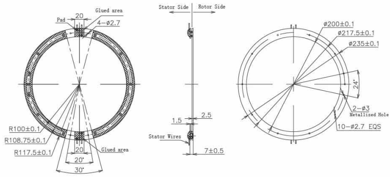
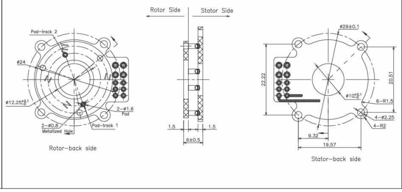
Rotor Side
Stator Side
ø128+0 -0.1
6-ø2.2 Hole EQS
ø122±0.1
ø45+0.1 -0
2-ø4 Pad
7-ø2.5 Pad
20
Fix the Rotor Wires with Glue
Brush Plate
Fix the Stator Wires with Glue
2
7±0.5
PCB1
PCB2

Stator Side
Rotor Side
ø105±0.1
4-ø2.2 EQS
ø55±0.1
ø110±0.1
pad
USB2.0 Wire (Back to center)
Within the pitch circle referred by glued area ø105
AWG24# Teflon + UL Towards center
7±0.5
2
Brush Plate
AWG24# Teflon + UL
USB2.0 Wire (no terminal)
USB2.0 Wire A type Female
USB2.0
Bare pad

LPKS047-0201	 Stator Side Stator Side ø74±0.1 ø47.2±0.1 30.15 Terminal 2 2 7±0.5 24° 2-ø2.6 THR Metallized Hole 2-ø2.8 THR Nonmetallized Hole ø60±0.1 ø47.2±0.1 ø82±0.1	
LPKS000-0202-1S-PIN	 Rotor Side Stator Side 3(For reference) 8.13 ø1.03 2.1 2.5 1.72 HARWIN H2173-05 1.5 1.5 6±0.5 0603 Chip Capacitor Capacitive Pad 1# pad GCT BC085 pad BC085 4.5 3-ø2 pad Rotor-back side ø21±0.1 ø20±0.1 4-10° 2-78° 5 5.5 6 pad Stator-back side	
LPKS000-0202-1S-SOCKET	 Rotor Side Stator Side 3 4.75 ø2.35 2.1 2.5 HARWIN H3163 1.5 1.5 6±0.5 0603 Chip Capacitor Capacitive Pad 1#Pad GCT BC085 Pad BC085 4.5 3-ø2 Pad Rotor-Back Side ø21±0.1 ø20±0.1 4-10° 2-78° 5 5.5 6 Stator-Back Side	
LPKS008-0204-0402	 Rotor Side Stator Side ø37±0.1 ø8±0.1 Wires Pad Rotor Wires 1.5 1.5 6±0.5 ø37±0.1 ø8±0.1 Wires Pad Stator Wires	
LPKS-0205	 ø82±0.1 ø59±0.1 ø70±0.1 60° Glued area <15 Wires R2.6 15° 15° 2 PCB2 PCB1 Colloid Colloid Stator Wires Rotor Wires 3 3 4-Brush 2 7±0.5 2-ø1 After Copper Punching 30° <15 Wires 2-ø3 Pad Glued area ø46±0.1 ø51±0.1 ø82±0.1	

LPKS025-085-0205-08S	 Stator Side Rotor Side Brush ø25$^{+0.1}_{-0}$ 4-R1.1 EQS 4-2.2 10 ø85$^{+0}_{-0.1}$ ø81±0.1 Stator Wires 2-ø3 Pad 8-ø2 Pad 1.5 1.5 6±0.5 ø25$^{+0.1}_{-0}$ 4-R1.1 EQS 4-2.2 10 ø81±0.1 8-ø2 Pad ø85$^{+0}_{-0.1}$ Rotor Wires 2-ø3 Pad	
LPKS028-02S-U2	 Stator Side Rotor Side 2-70±0.1 5 3 R1.5 32.3±0.1 45° 5.15 28° 5.24 C1 34.97 ø76.2$^{+0}_{-0.1}$ ø28.19$^{+0.1}_{-0}$ Pad SM06B-GHS-TBT JST Terminal Connection-Transverse plug 63.7±0.1 PCB 1-Back side 6.2±0.5 4.05 4.25 PCB 1-Back side PCB 2-Back side PCB2 4.25 4.05 1.6 1.6 Pad BM06B-GHS-TBT JST for Terminal Connection-in line plug 5.15 32.3±0.1 5 3 R1.5 34.97 45° 28° C1 ø28.19$^{+0.1}_{-0}$ ø76.2$^{+0}_{-0.1}$ 63.7±0.1 2-70±0.1 PCB 2-Back side	
LPKS030-0410-0202	 4-ø2.5 EQS ø109$^{+0}_{-0.1}$ ø103±0.1 45° ø30$^{+0.1}_{-0}$ 2-ø1 After Copper Bunching Fixed Glued Wires 4-ø1.5 After Copper Bunching 6-ø3 Pad 7 7±0.5 2 2 PCB1 PCB2 Brush Plate ø109$^{+0}_{-0.1}$ ø103±0.1 4-ø2.5 EQS 45° ø30$^{+0.1}_{-0}$ After Copper Bunching 2-ø1 After Copper Bunching Fixed Glued Wires 4-ø1.5 After Copper Bunching 6-ø3 Pad 7	
LPKS036-0202-04S	 Stator Side Rotor Side 4-ø2.6∨ø4.6*90°↧1 EQS ø76±0.1 B ø96±0.1 ø36±0.1 Colloid Height≤6.5 Stator Wires Pad // 0.1 A A Brush ≤6.5 ≤6.5 2 2 7±0.5 ø96±0.1 4-ø2.6∨ø4.6*90°↧1 EQS ø76±0.1 ◎ ø0.05 B ø36±0.1 Stator Wires Pad Colloid Height ≤6.5	
LPKS040-0501	 Stator Side Rotor Side 1.5 1.5 ø80±0.1 4-ø3 EQS ø73.8±0.1 ø40±0.1 5-ø2 Pad Glued Skech(Colloid Height≤3.5mm) AWG24# Tin Plated Teflon ® UL AWG24# Tin Plated Teflon ® UL 6±0.5 ø80±0.1 4-ø3 EQS ø73.8±0.1 ø40±0.1 5-ø2 Pad Glued Skech(Colloid Height≤3.5mm)	

LPKS040-0405	 Rotor Side Stator Side ø100 +0 -0.1 ø40 +0.1 -0 4-ø2.2 EQS 4-ø4.2 ⌵90° T 1 ø45±0.1 45° Rotor Back Side Brush MOLEX 504195-0570 1.5 1.5 6±0.5 3-120° ø40 +0.1 -0 Stator Wires ø45±0.1 ø97 +0 -0.1 4-ø2.2 EQS 4-ø4.2 ⌵90° T 1 Stator Back Side	
LPKS013-0402	 ø16±0.1 R4.25 R18.75 Connecting Traces Rotating Direction 60° 60° 30° 30° R2 R26.5 Rotor Side Stator Side AWG26#Tin Plated Teflon + UL SM04B-SRSS-TB-JST 1 1 5±0.5 ø36±0.1 2-ø4 THR Welding Wires Towards Center Red Green Black White 19±0.1 30°	
LPKS060-0201	 ø90±0.1 45° 4-ø3.2 EQS ø83±0.1 ø60±0.1 2-ø2 Pad 4 Stator Wires Stator Side Rotor Side 1.5 1.5 6±0.5 ø83±0.1 45° 4-ø3.2 EQS ø90±0.1 ø60±0.1 2-ø2 Pad 4 Rotor Wires	
LPKS060-0412-E2	 8-ø2.7±0.1 ⌵ø5.7↧1.5*90° EQS ø186±0.1 ø192±0.1 ø60±0.1 22.5° Pad Rotor Wires Stator Side Rotor Side Brush 2 2 7±0.5 8-ø2.7 ⌵ø5.7↧1.5*90° EQS ø186±0.1 ø192±0.1 ø60±0.1 22.5° Stator Wires Pad	
LPKS060-0402	 3-ø2.5±0.1⌵ø5.5↧1.5 EQS ø66.4±0.1 ø108±0.1 Pad ø60±0.1 Rotor Wires Stator Wires Rotor Wires Stator Wires PCB1 PCB2 2 2 7±0.5 ø108±0.1 3-ø2.5±0.1⌵ø5.5↧1.5 EQS ø66.4±0.1 Pad ø60±0.1	

LPKS060-0210-05S	 Rotor Side Stator Side 6−ø4.2 Sinking Hole 90mm depth 6−ø2.2 Through Hole ø124±0.1 ø130$^{+0}_{-0.1}$ Rotor Wires Fixed Glued 2−ø4 Pad 12.4 ø60$^{+0.1}_{-0}$ 4−ø2 Pad 2 2 7±0.5 Stator Wires Fixed Glued 5−ø2 Pad	
LPKS170-0515	 Rotor Side Stator Side Glue Entrance 30° ø326 6−ø5.5 ⌴ø10▽8 EQS ø170$^{+0.2}_{-0}$ ø182±0.2 Rotor Wires Stator Wires Engineering Plastic FR-4 3±0.5 4 30±0.5 8−ø4.2 ⌵ø8.2▽2×90° EQS 22.5° ø182±0.2 ø172 ø320	
LPKS174-0802	 Rotor Side Stator Side 6−ø5.2 EQS 6−ø3.2 EQS ø181±0.1 ø228±0.1 ø174±0.1 8−ø2 Wires Pad 21 Rotor Side 3 3 9±0.5 Stator Side	
LPKS013-02S	 Stator Side Rotor Side 16.5 5.3 Stator Wires 3−ø3.4 ø13$^{+0.1}_{-0}$ 3−ø1.8 10.8 10.5 2−ø2 Pad ø40$^{+0}_{-0.1}$ R1 Pad 0.8 1.5 3.8 8.3±0.5 ø40$^{+0}_{-0.1}$ ø16.4±0.1 ø13$^{+0.1}_{-0}$ 3−ø3.4 Sinking Hole 0.8*90° Rotor Wires 3−ø1.8 R1 3−120°	
LPKS200-0206	 Stator Side Rotor Side Glued area 20 Pad 4−ø2.7 R100±0.1 R108.75±0.1 R117.5±0.1 20 Glued area 20° 30° 1.5 2.5 Stator Wires 7±0.5 ø200±0.1 ø217.5±0.1 ø235±0.1 24° 2−ø3 Metallized Hole 10−ø2.7 EQS	
LPKS010-02S	 Rotor Side Stator Side Pad-track 2 ø24 ø12.25$^{+0.1}_{-0}$ 2−ø1.6 Pad 2−ø0.8 Metallized Hole Pad-track 1 Rotor-back side 1.5 1.5 6±0.5 ø29±0.1 22.22 20.51 ø10$^{+0.1}_{-0}$ 6−R1.5 4−ø2.25 4−R2 9.32 19.57 Stator-back side	

* The specification above might be subject to change prior to notice

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