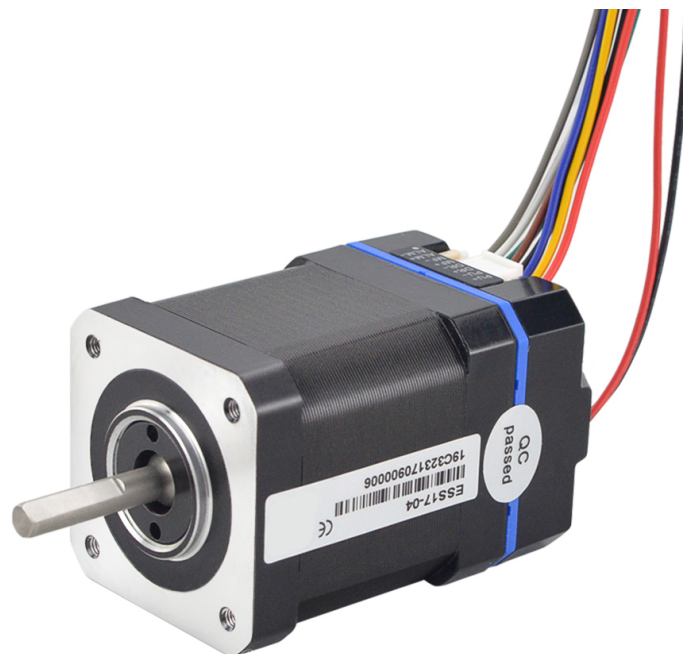


User's Manual
For
ESS17-04 / ESS17-07
Integrated Stepper Motor

©2020 All Rights Reserved Attention: Please read this manual
carefully before using the Motor!



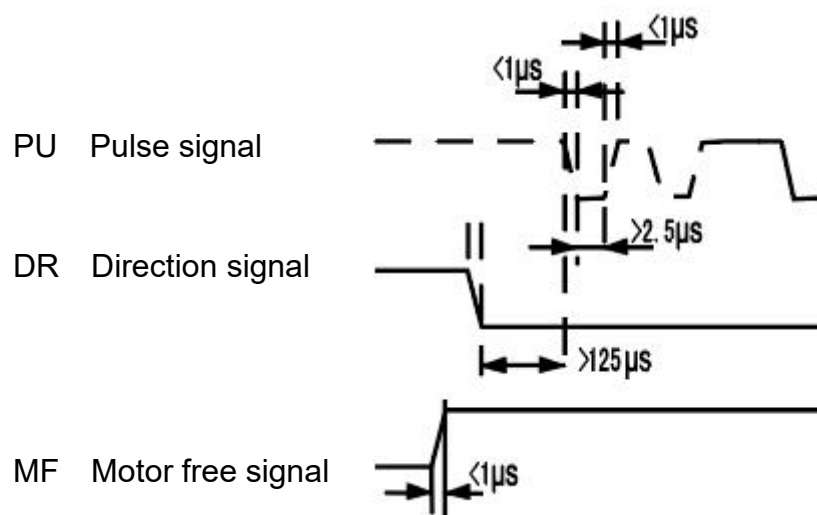
ESS17-04 / ESS17-07

Integrated Stepper Motor

Features

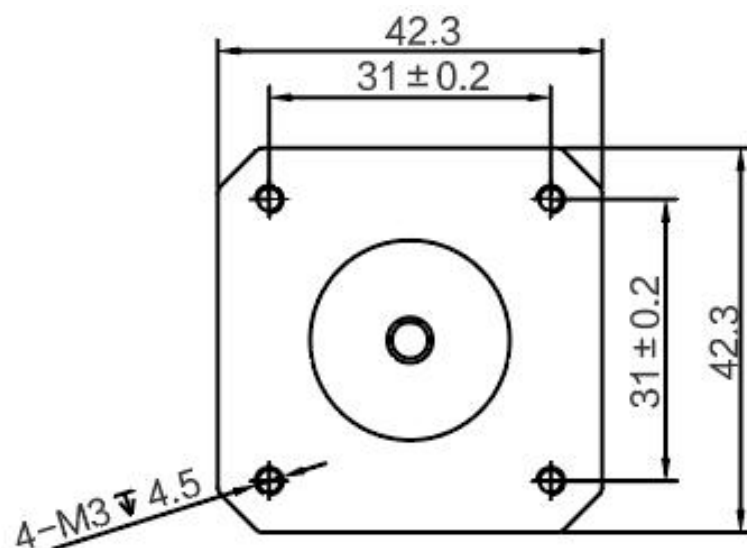
- Using a new 32-bit motor control, dedicated DSP chip
- Pulse input frequency up to 200 KHz
- Small torque attenuation, speed up to 3000 RPM
- Built-in alarm output, for monitoring and controlling
- Intelligently adjust current, reduce vibration, noise and this can increase efficiency by 35%
- Pulse/direction (PU / DR) control
- Default microstep resolution: 1000
- Voltage range: DC24V ~ 36V
- Over-voltage, under-voltage and over-current protection
- Excellent high speed performance and rigidity, combined with advantages of servo motor and stepper motor
- Drive and motor integrated, simple wiring

Input signal waveform sequence diagram

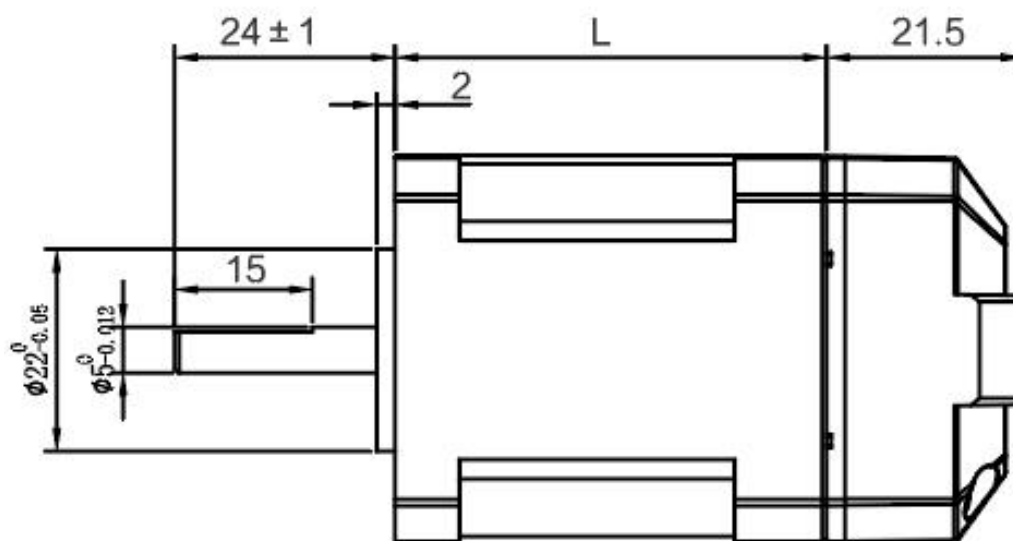


Installation size (unit: mm)

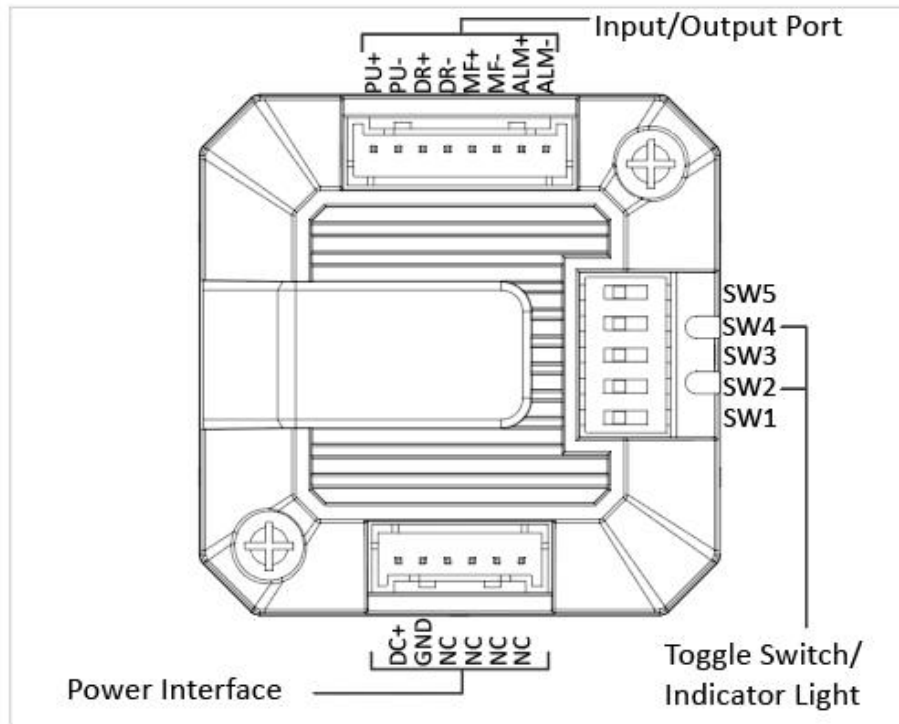
Front view



Side view



Input/output ports



| Function | Specification | Remark |
|----------|-------------------------|--|
| VDC+ | Supply voltage | VDC: 24V ~ 36V |
| GND | Ground | |
| PU+ | Pulse input signal+ | Signal power supply: 5V ~ 24V, >5V, add a current-limiting resistance |
| PU- | Pulse input signal- | |
| DR+ | Direction input signal+ | |
| DR- | Direction input signal- | |
| MF+ | Motor freed signal+ | |
| MF- | Motor freed signal- | |
| ALM+ | Alarm output signal+ | Over-current, over-voltage, position following error alarm output |
| ALM- | Alarm output signal- | |
| - | NC | NC |

Toggle Switch description

| PU/Rev | SW2 | SW3 | SW4 | SW5 |
|--------|-----|-----|-----|-----|
| 400 | ON | ON | ON | ON |
| 800 | OFF | ON | ON | ON |
| 1600 | ON | OFF | ON | ON |
| 3200 | OFF | OFF | ON | ON |
| 6400 | ON | ON | OFF | ON |
| 12800 | OFF | ON | OFF | ON |
| 25600 | ON | OFF | OFF | ON |
| 51200 | OFF | OFF | OFF | ON |
| 1000 | ON | ON | ON | OFF |
| 2000 | OFF | ON | ON | OFF |
| 4000 | ON | OFF | ON | OFF |
| 5000 | OFF | OFF | ON | OFF |
| 8000 | ON | ON | OFF | OFF |
| 10000 | OFF | ON | OFF | OFF |
| 20000 | ON | OFF | OFF | OFF |
| 40000 | OFF | OFF | OFF | OFF |

SW1: Motor rotation direction OFF=CW , ON=CCW





Electrical Specifications

| Parameters | ESS17-04 / ESS17-07 | | | |
|-----------------------|---------------------|-----|-----|------|
| | MIN | TYP | MAX | UNIT |
| Output Current | 0 | - | 2 | A |
| Input Voltage | 18 | 24 | 36 | Vdc |
| Logic Signal Current | 7 | 10 | 16 | mA |
| Logic Signal Voltage | - | 5 | 24 | V |
| Pulse Input Frequency | 0 | - | 200 | kHz |
| Isolation Resistance | 100 | - | - | MΩ |


Others Specifications

| Parameters | UNIT | ESS17-04 | ESS17-07 |
|-----------------------|-------------------|----------|----------|
| NO. of Phase | -- | 2 | 2 |
| Step Angle | ° | 1.8 | 1.8 |
| Motor length | mm | 47 | 60 |
| Holding Torque | N.m | 0.48 | 0.75 |
| Rated Current | A | 2.0 | 2.0 |
| Resistance/Phase | Ω | 1.35 | 1.80 |
| Inductance/Phase | mH | 2.9 | 3.7 |
| Rotor Inertia | g.cm ² | 77 | 110 |
| Weight | Kg | 0.43 | 0.53 |
| Insulation Class | -- | B | |
| Operating Temperature | °c | 0 ~ 55 | |

Fault diagnosis

| Fault code | Fault Information | RUN / ALM Output | Reset |
|------------------|------------------------------|--|-----------------------------|
| Err1:0x01 | Over-current / short circuit |  | Power down reset |
| Err2:0x02 | Over-voltage |  | Lock machine /auto recovery |
| Err3:0x03 | Under-voltage |  | Lock machine /auto recovery |
| Err5:0x05 | position following error |  | Power down reset |

Operating Environment

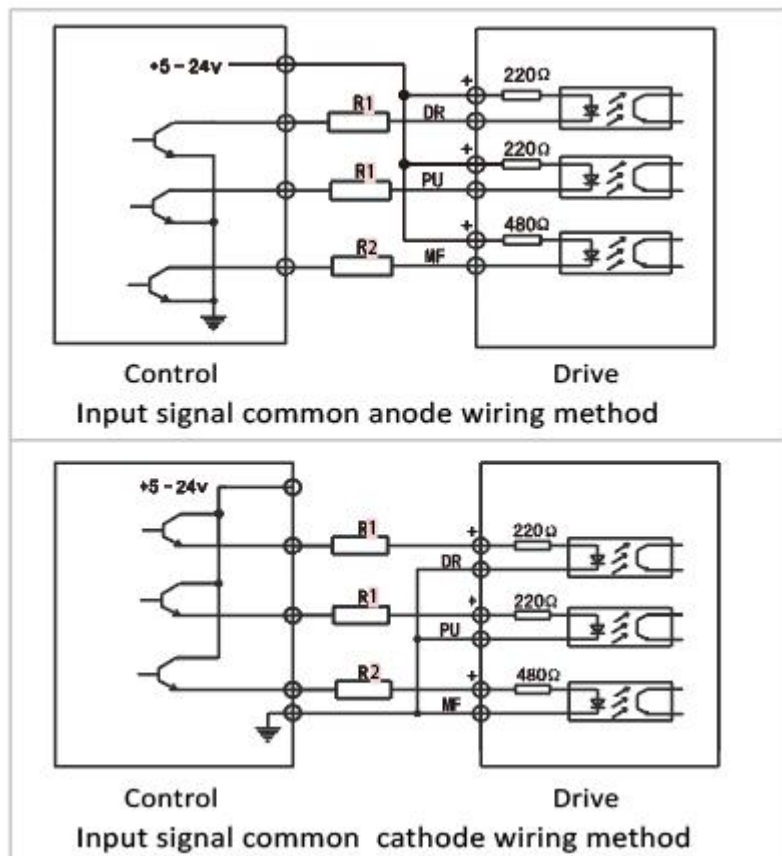
| Cooling | Natural cooling | |
|--|-----------------|---|
| Working Environment | Workplace | Stay away from other heating sources, Avoid dust, oil fog , corrosive and combustible gases and Strong vibration site |
| | Temperature | 0°c ~ 50°c |
| | Humidity | 40 - 90%RH(no condensation, no frosting) |
| | Vibration | 10 ~ 55Hz/0.15mm |
| Storage Temperature | -20°c ~ +80°c | |
| <div> Warning:</div> <div>Motor installation, do not knock motor back cover, so as to avoid damage encoder.</div> | | |

Control signal connection

+5V: R1=0, R2=0

+12V: R1=510Ω, R2=820Ω

+24V: R1=1.2KΩ, R2=1.8KΩ



Control signal connection(Output singal)

