

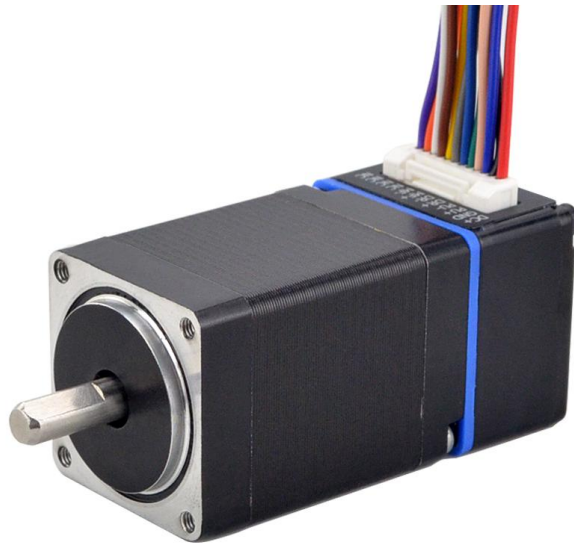
User's Manual

For

ESS11-01

Integrated Stepper Motor

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



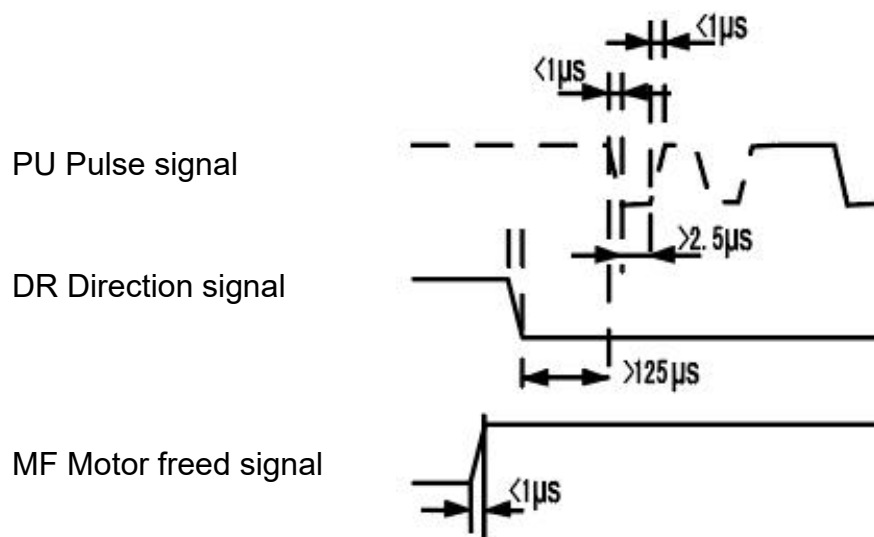
ESS11-01

Integrated Stepper Motor

Features

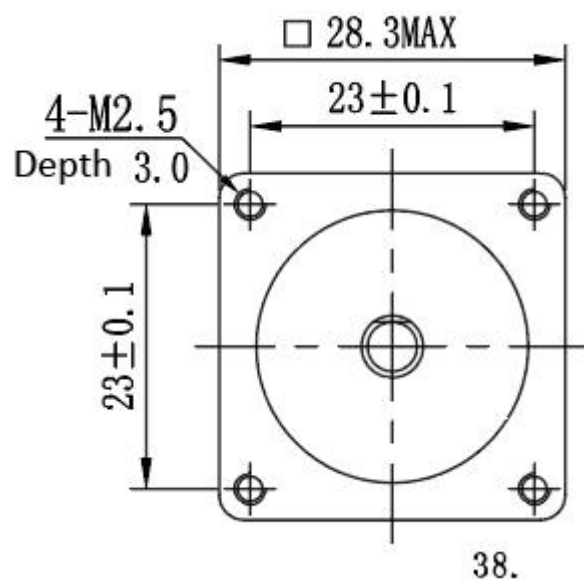
- Using a new 32-bit motor control, dedicated DSP chip
- Pulse input frequency up to 200 KHz
- Small torque attenuation, speed up to 3000 RPM
- Built-in alarm output, for monitoring and controlling
- Intelligently adjust current, reduce vibration, noise and this can increase efficiency by 35%
- Pulse/direction (PU / DR) control
- Default microstep resolution: 1000
- Voltage range: DC24V
- 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

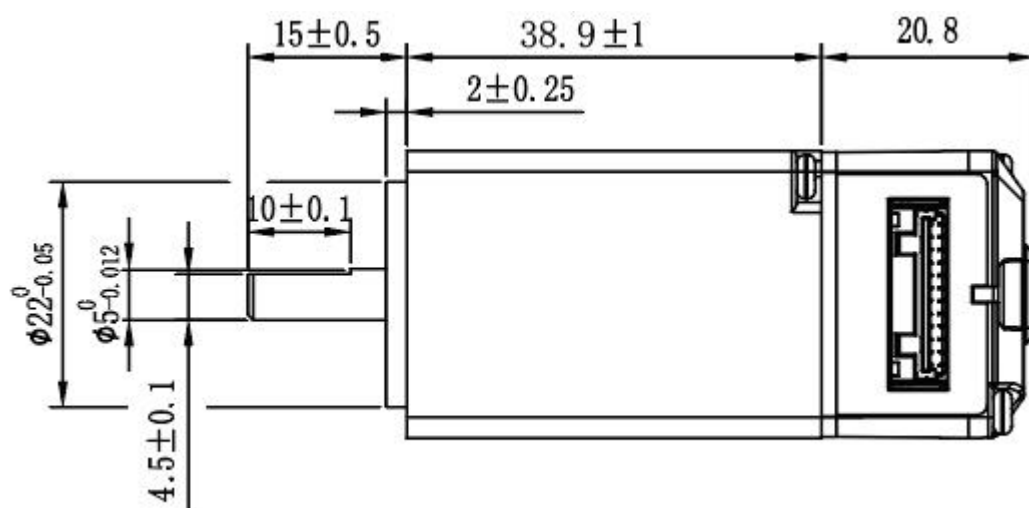


Installation size (unit: mm)

Front view



Side view



Indicator light description

| Color | Symbol | Specification |
|-------|-----------|---|
| RED | RUN / ALM | When the power is on, the indicator is always on; |
| | | In case of over-current, the indicator light flashes once and circulates; In case of over-voltage, the indicator light flashes twice and circulates; In case of under-voltage, the indicator light flashes three times and circulates; In case of out of tolerance, the indicator light flashes five times and circulates; |

Input/output ports

| Function | Specification | Remark |
|----------|-------------------------|---|
| DC+ | Supply voltage | DC: 24V |
| 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- | |
| -- | NC | NC |
| -- | | |
| -- | | |
| -- | | |





Electrical Specifications

| Parameters | ESS11-01 | | | |
|-----------------------|----------|-----|-----|------|
| | MIN | TYP | MAX | UNIT |
| Output Current | 0 | - | 1.2 | A |
| Input Voltage | - | 24 | - | 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 | ESS11-01 |
|-----------------------|-------------------|----------|
| NO. of Phase | -- | 2 |
| Step Angle | ° | 1.8 |
| Motor length | mm | 38.9 |
| Holding Torque | N.m | 0.074 |
| Rated Current | A | 1.0 |
| Rotor Inertia | g.cm ² | 10 |
| Insulation Class | -- | B |
| Operating Temperature | °c | 0 ~ 55 |
| Weight | Kg | 0.18 |

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 recoery |
| Err3:0x03 | Under-voltage |  | Lock machine /auto recoery |
| Err5:0x05 | position following error |  | Power down reset |

Operating Environment

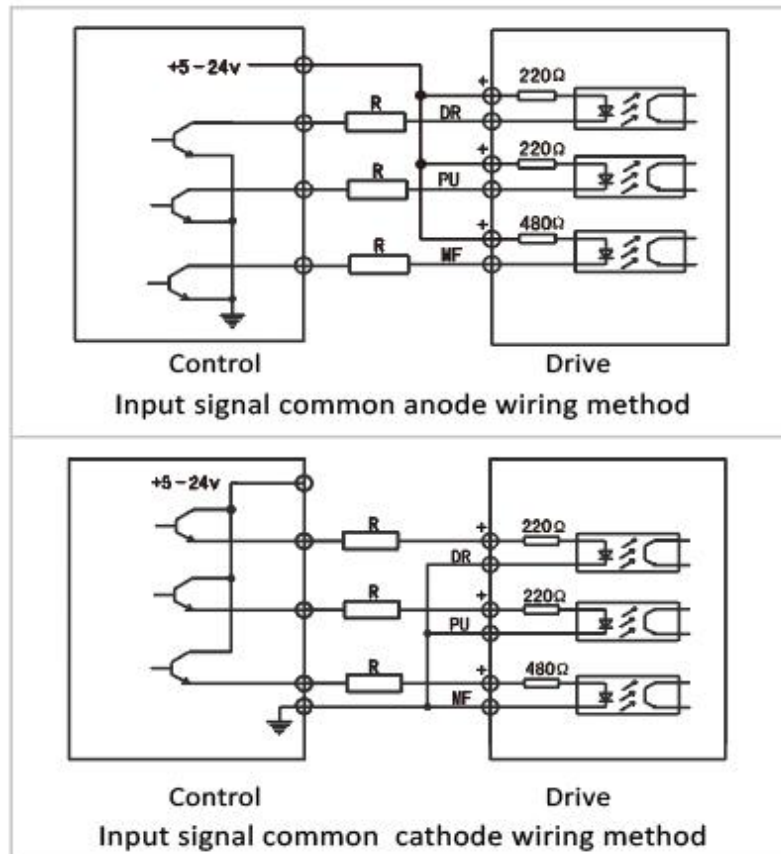
| Cooling | Fin cooling | |
|--|---------------|---|
| Working Environment | Workplace | Stay away from other heating sources, Avoid dust, oil fog , corrosive and combustible gases and Strong vibration site |
| | Temperature | 0°c ~ 50°c |
| | Humidity | 40-90%RH(no condensation, no frosting) |
| | Vibration | 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(Input singal)

+5V: R1=0, R2=0

+12V: R1=510Ω, R2=820Ω

+24V:R1=1.2KΩ,R2=1.8KΩ



Control signal connection(Output singal)

