

USER MANUAL

OUKEDA NEMA 17 Planetary Gearbox Stepper Motor

Manufacturer part number: OK42HC40-174AG5-C1

Product overview

This document summarizes the electrical, mechanical, gearbox, and wiring information supplied for the OK42HC40-174AG5-C1 stepper motor with planetary gearbox. Read the specifications and verify the selected gearbox ratio and torque limits before installation.

Important: The source material contains a gearbox table with potentially misaligned row labels/units. Values are reproduced as supplied where possible; confirm ambiguous gearbox torque ratings with the seller or manufacturer before relying on them for a design.

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1. Electrical Specifications

Parameter	Specification
Manufacturer part number	OK42HC40-174AG5-C1
Number of phases	2
Step angle	1.8° ±5%
Phase voltage	3.36 VDC
Rated current per phase	1.68 A
Phase resistance	1.95 Ω ±10% at 20°C
Inductance	4.4 mH ±20%
Holding torque	0.45 N·m
Insulation class	Class B
Insulation resistance	100 MΩ minimum at 500 V DC
Operating voltage (listed)	12–24 VDC
Ambient temperature	–20°C to +50°C
Ambient humidity	15% to 95% (source does not specify condensation conditions)

Power and drive note: Use a suitable bipolar stepper-motor driver with current limiting set for the motor's rated 1.68 A/phase. The listed 3.36 V phase voltage is the winding rating; a chopper driver may use a higher DC supply (within the stated 12–24 VDC range) while regulating winding current. Do not connect the motor windings directly to a power supply.

2. Mechanical Specifications

Parameter	Specification
Frame size	42 × 42 mm (NEMA 17 class)
Motor body diameter	36 mm
Gearbox length options	29.2 mm / 36.8 mm / 44.6 mm
Output shaft diameter	8 mm
Output shaft length	15 mm
Mounting holes	4 × M3
Mounting dimension	42 mm
Cable length	500 ±20 mm
Lead information	Listing states 6 leads; drawing shows a PH-6Y 6-pin connector and an XH2.54 4-pin connector. Confirm pinout before wiring.
Weight	300 g (as listed; configuration may affect weight)

3. Gearbox Ratio Options

The product listing provides the following nominal reduction ratios. The exact ratios below are transcribed from the supplied gearbox specification image.

Nominal ratio	Exact ratio	Gear stages (interpreted from row marked "i")	Gearbox length
4:1	3.71:1	1	29.2 mm
5:1	5.18:1	1	29.2 mm
14:1	13.764:1	2	36.8 mm
19:1	19.217:1	2	36.8 mm
27:1	26.832:1	2	36.8 mm
51:1	51.065:1	3	44.6 mm
71:1	71.298:1	3	44.6 mm
100:1	99.548:1	3	44.6 mm
139:1	138.99:1	3	44.6 mm

Torque table caution: The source table also lists values 20/30/40 and 40/50/60 with "Kg.cm" units, but the corresponding row labels appear inconsistent ("Number of gear trains" and "Max Permissible Torque"). These values have not been reinterpreted as confirmed torque ratings. Obtain a corrected manufacturer datasheet before selecting a gearbox for a torque-critical application.

4. Installation and Operation Guidance

Mechanical mounting

- Secure the 42 mm mounting face using the four M3 mounting holes and suitable fasteners.
- Align the motor and driven load to avoid radial or axial loads beyond the gearbox's rating.
- Do not hammer, press, or apply impact loads to the output shaft. Support the shaft/load during assembly.
- Confirm the selected gearbox length and shaft dimensions against the drawing before fabricating brackets or couplers.

Electrical connection

- Identify the two motor phases and winding pairs with the manufacturer's pinout or a suitable meter before connecting a driver.
- The supplied drawing labels wire colors BLK, RED, GRN, and BLU, but does not provide a complete, unambiguous pin-to-phase table in the text. Do not assume connector pin order or color mapping without verification.
- Keep wiring disconnected while making or changing connections. Check driver current limits and supply polarity before powering up.

Commissioning

- Begin with a conservative speed and acceleration profile, then increase gradually while checking for missed steps, excess heating, vibration, or unusual noise.
- Provide adequate ventilation and keep the motor within the stated ambient temperature range.
- Stop operation if the gearbox binds, the motor overheats, or mounting hardware loosens.

5. Dimensional Drawing and Wiring Reference

Use the supplied drawing as a visual reference. Dimensions are reproduced from the source image; verify critical fits from a manufacturer-controlled drawing before machining parts.

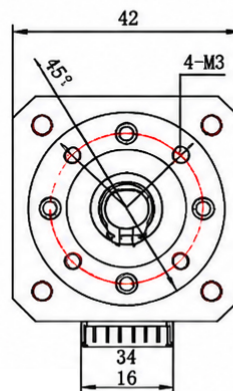
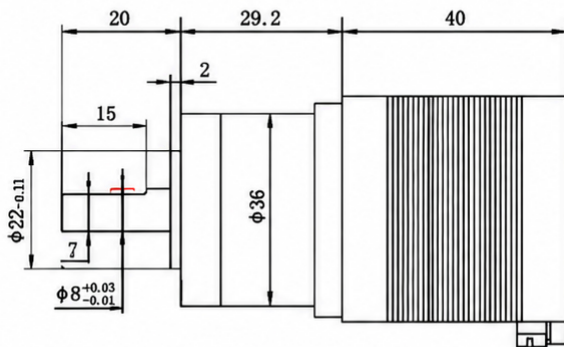
Gearbox specification image (source)

Gearbox Specification:

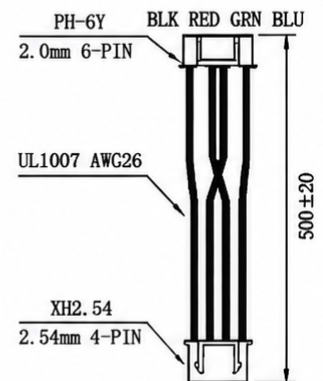
Reduction Ratio	X:1	4	5	14	19	27	51	71	100	139
Exact reduction ratio	X:1	3.71	5.18	13.764	19.217	26.832	51.065	71.298	99.548	138.99
Exact Reduction Ratio	i	1	1	2	2	2	3	3	3	3
Number op gear trains	Kg.cm	20	20	30	30	30	40	40	40	40
Max Permissible Torque	Kg.cm	40	40	50	50	50	60	60	60	60
Gear Box Length(L)	mm	29.2	29.2	36.8	36.8	36.8	44.6	44.6	44.6	44.6

Dimensional drawing and wiring diagram (source)

Dimensional Drawing:



Wiring Diagram



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