

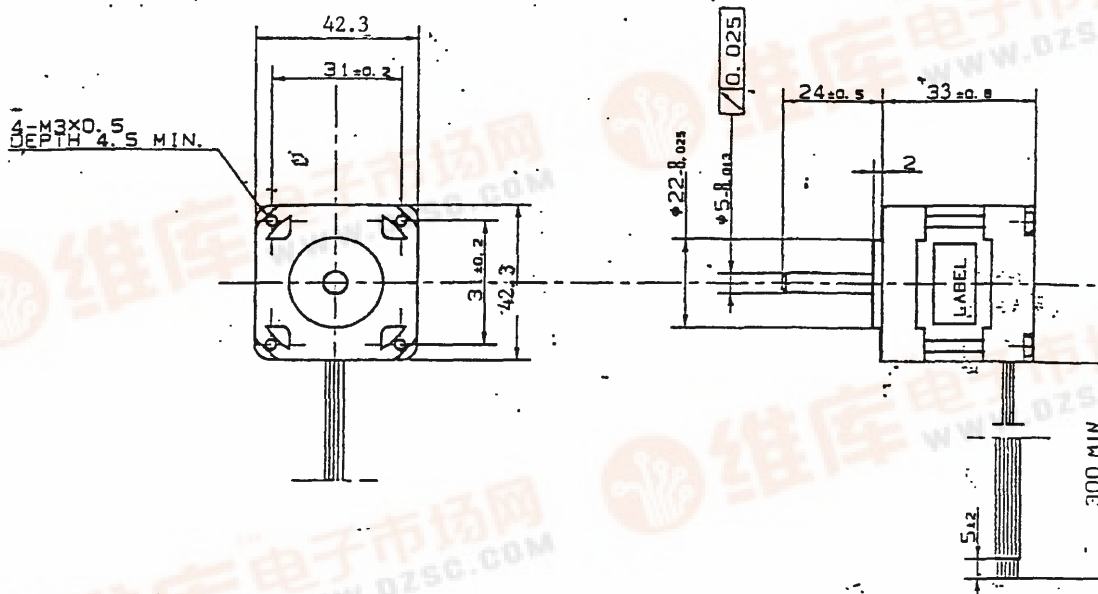


ASTROSYN

Y129

PAGE 1 of 3

TECHNICAL DATA



1. SCOPE

1-1 Scope

This specification covers the general requirements for the step motor.

1-2 Type

This step motor consists of unipolar winding stator and hybrid magnet rotor.

2. RATING

2-1 Duty	: Continuous
2-2 Step angle	: 1.8 deg/full step
2-3 Number of phase	: 4
2-4 Rated voltage	: 12 V D.C.
2-5 Rated current	: 0.16 A
2-6 Insulation class	: B
2-7 Operating condition	
2-7-1 Ambient temperature	: 0 °C to 50 °C
2-7-2 Ambient humidity	: 10 % to 90 % (No condensation)
2-8 Storage condition	
2-8-1 Ambient temperature	: -40 °C to 85 °C
2-8-2 Ambient humidity	: 5 % to 95 % (No condensation)

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Y129

PAGE 2 of 3

TECHNICAL DATA

3. STANDARD TEST CONDITION

Unless otherwise specified, all measurements and tests shall be made under the following condition.

- 3-1 Ambient temperature : 25 °C
- 3-2 Ambient humidity : 65 %
- 3-3 Atmospheric pressure : 1.013 mb
- 3-4 Supplied winding voltage : 12 V
- 3-5 Test circuit : According to Fig.1
- 3-6 Exciting method : 2 phase exciting

If there is no doubt in the measured or tested result, the test can be made under the temperature 5 °C to 35°C, the humidity 45% to 85% and atmospheric pressure 950mb to 1.020mb.

4. ELECTRICAL CHARACTERISTICS

- 4-1 Winding resistance : 75 Ohm $\pm 10\%$ at 25 °C
- 4-2 Winding inductance : 60 mH $\pm 20\%$ (1KHz, 1Vrms)
- 4-3 Insulation resistance : More than 100 MOhm
(Apply 500 V D.C. between motor frame and lead wires.)
- 4-4 Dielectric strength : More than 500V, 1 minute.
(Motor is capable of withstanding without break down, when 500 V A.C. is applied for period of a minute between motor frame and lead wires.)
- 4-5 Temperature rise : Less than 80 deg.
(Measured by resistance method when two windings are excited by 12 V D.C.)
- 4-6 Holding torque : 900 gf-cm $\pm 15\%$
(0.1 A/phase, 2 phase exciting)
- 4-7 Detent torque : 150 gf-cm Nominal
- 4-8 Maximum slewing pulse rate : More than 760 p.p.s.
- 4-9 Maximum starting pulse rate : More than 730 p.p.s.
- 4-10 Positional accuracy : Less than ± 0.144 deg
(excluding hysteresis)
- 4-11 Lead wire
- 4-11-1 Type : AWG 26 UL 3265
- 4-11-2 Color : According to Table 1. and Fig 2.

phase	COMMON	1	2	3	4
color	Black White	Brown	Red	Orange	Yellow

Table 1. Lead color



ASTROSYN

Y129

PAGE 3 of 3

TECHNICAL DATA

4-12-3 Direction of rotation
Phase sequence to produce clockwise rotation viewed from mounting end is as follows.

STEP	BROWN	RED	ORANGE	YELLOW	BLACK, WHITE
1	gnd	gnd			+V
2		gnd	gnd		+V
3			gnd	gnd	+V
4	gnd			gnd	+V

Table 2. Phase sequence (CW rotation)

5. MECHANICAL CHARACTERISTICS

- 5-1 Mechanical dimensions : According to drawing number 113-0427- (3/3)
- 5-2 shaft : SUS 303
- 5-2-1 Material : $\phi 5 - 8_{+0.015}$
- 5-2-2 Diameter : Less than 0.025
- 5-2-3 Run out : 28 g-cm approximately
- 5-3 Rotor inertia : Single row ball bearing
- 5-4 Bearing : As per our sample
- 5-5 Audible noise : Aluminum alloy
- 5-6 End-bell material : Approximately 220 g
- 5-7 Weight : More than 10,000hr
- 5-8 Life : (Motor is operated in 333 p.p.s. rate and without frictional and inertial load.)

6. IDENTIFICATION

- 6-1 Label : White Label
- 6-2 Identification : Y129
- 6-2-1 Vander part number : 1.8 DEG/STEP
- 6-2-2 Step angle : 75 OHM
- 6-2-3 Winding resistance

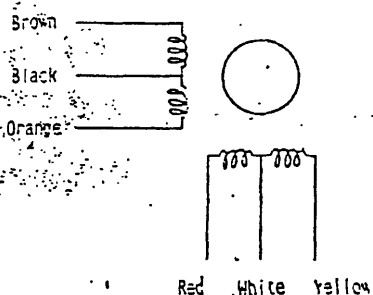


Fig. 2 LEAD COLOR

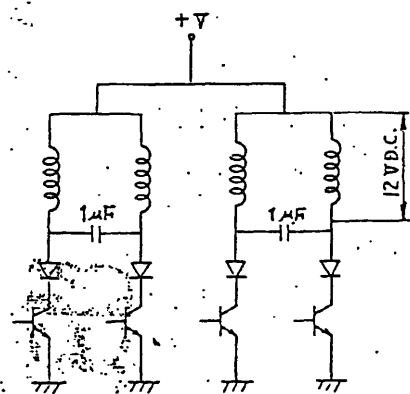


Fig. 3 TEST CIRCUIT



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TECHNICAL DATA

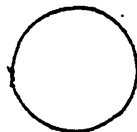
STEPPER MOTOR Y129

NEW

OLD

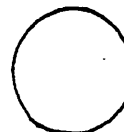
AMENDMENT TO LEAD WIRE COLOUR CODE CONFIGURATION TO PARALLEL TYPE 584389 EFFECTIVE FROM THE 24TH MARCH 1997.

BROWN	A
WHITE	Q
RED	A



ORANGE	B
BLACK	Q
YELLOW	B

BROWN	A
BLACK	Q
ORANGE	A



RED	B
WHITE	Q
YELLOW	B