



Reliance

Precision Mechatronics LLP

Precision Motion Control Components & Mechatronic Assemblies

Stepper Motors



Reliance Standard & Customised Components



Size 8 Stepper Motor

2 Phase Unipolar, 1.8° Step Angle

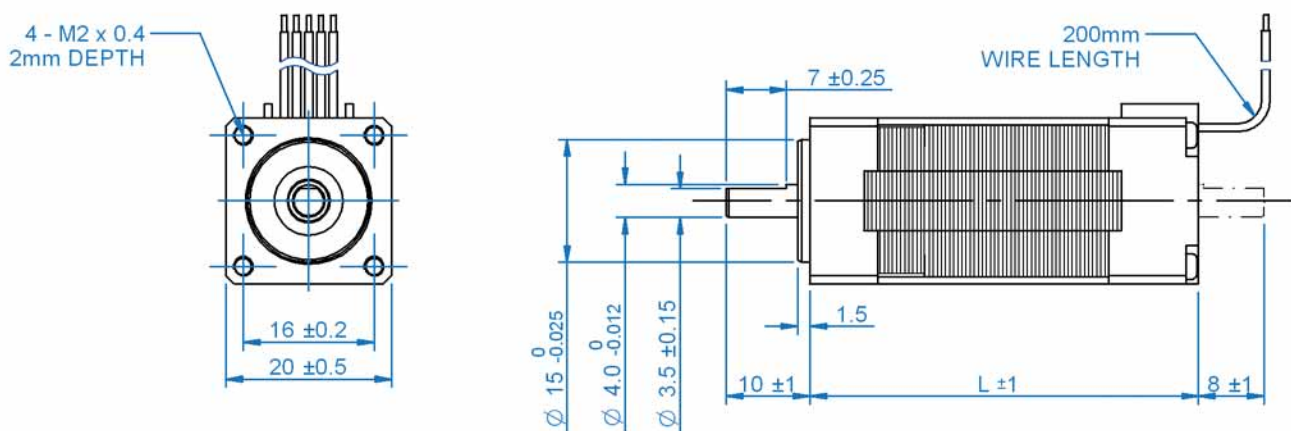
RoHS Compliant

Modified Standards Available On Request:

- Low volume, output shaft and wire modifications
- Other wiring and performance options

Associated products:

- Reli-a-Flex® couplings
- Leadscrews



All dimensions in millimetres

Type Number		Step Angle Deg.	Rated Voltage V/Phase	Rated Current A/Phase	Winding Resistance Ω/Phase	Inductance mH/Phase	Holding Torque Nm	Motor Length L	Rotor Inertia $\times 10^{-7} \text{kg.m}^2$	Mass g
Single Shaft	Dual Shaft									
RSM08N1-LC	RSM08N11-LC	1.8	3.5	0.35	10	2.4	0.013	30	1.9	50
RSM08N2-LC	RSM08N12-LC	1.8	7	0.35	20	4.6	0.024	46.5	4	85

Technical Specification:

- Shaft end play0.075mm max. at load 9.8N
- Shaft radial play0.03mm max. at load 4.9N
- Shaft runout0.05mm T.I.R. max.
- Insulation classNEMA Class B (+130°C, except lead wires)
- Insulation resistance100MΩ min. (at 500V DC)
- Dielectric strength500v AC (1 minute)
- Operating temperature range-20 to +50°C
- Storage temperature range-40 to +70°C
- Operating humidity range5% to 95% RH
- Permissible temperature rise80°C max.

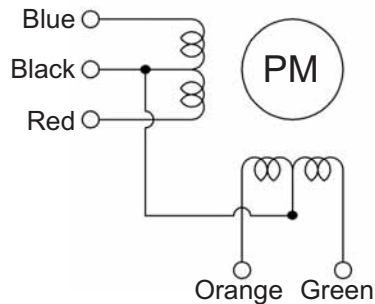
Note: Do not allow the surface temperature of the motor case to rise above 90°C during operation.

Tel : +44 (0) 1484 601002
www.rpmechatronics.co.uk

Fax : +44 (0) 1484 601061
sales@rpmechatronics.co.uk

Wiring Diagram:

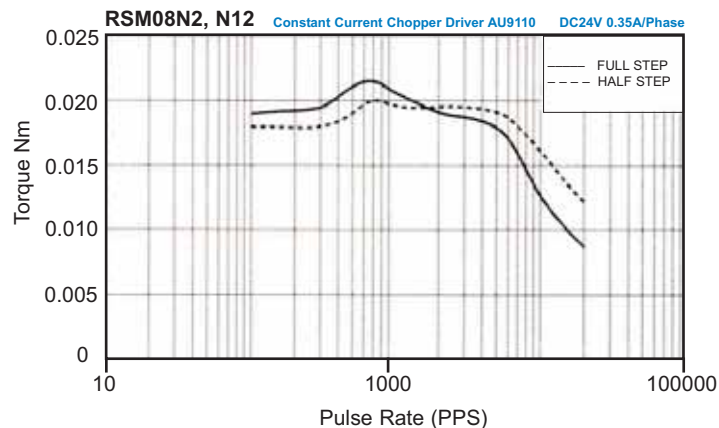
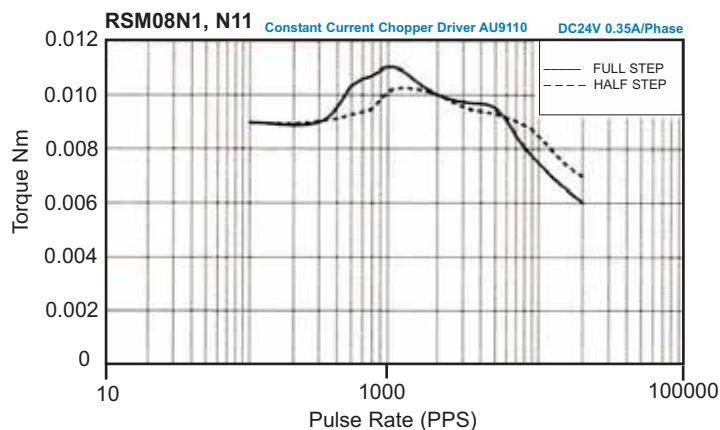
UNIPOLAR



CW rotation mounting end

Step	Blue	Orange	Red	Green	Black
0	ON	ON			+V
1		ON	ON		+V
2			ON	ON	+V
3	ON			ON	+V
0	ON	ON			+V

Pulse Rate vs Torque Characteristics:



Available Accessories:

AU9110 : 2-Phase Full/Half Step



Features:

- Unipolar driver
- Full/half step
- Output current range variable up to 2.0A/phase
- Input options:
 - 1 pulse input (pulse string and direction signal)
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 32mm

AU9114 : 2-Phase Micro Step Driver



Features:

- Unipolar driver
- 1/8 (1600 steps) and 1/16 (3200 steps) micro steps
- Motor output current range 0.5A to 2.0A per phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 35mm

Full drive specifications available on request



Size 11 Stepper Motors

2 Phase Unipolar, 1.8° Step Angle

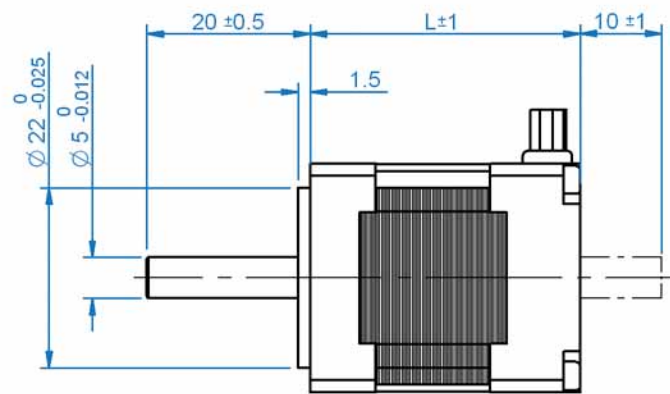
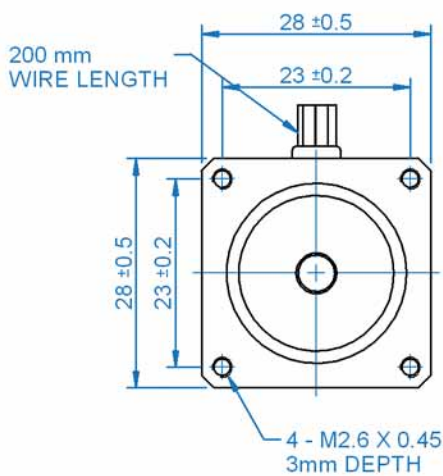
RoHS Compliant

Modified Standards Available On Request:

- Low volume, output shaft and wire modifications
- Other wiring and performance options

Associated products:

- Reli-a-Flex® couplings
- Leadscrews



All dimensions in millimetres

Type Number		Step Angle Deg.	Rated Voltage V/Phase	Rated Current A/Phase	Winding Resistance Ω/Phase	Inductance mH/Phase	Holding Torque Nm	Motor Length L	Rotor Inertia x10 ⁻⁷ kg.m ²	Mass g
Single Shaft	Dual Shaft									
RSM11N1E2-LC	RSM11N11E2-LC	1.8	2.6	0.95	2.7	1.2	0.06	33.5	8	150
RSM11N2E3-LC	RSM11N12E3-LC	1.8	1.4	1.4	1.0	0.55	0.09	47.5	18	250

Technical Specification:

- Shaft end play0.075mm max. at load 4.9N
- Shaft radial play0.025mm max. at load 4.9N
- Insulation resistance100MΩ min. (at 500V DC)
- Dielectric strength500v AC (1 minute)
- Overhang load19.6N
- Allowable thrust load4.9N
- Operating temperature range-20 to 50°C
- Permissible temperature rise80°C max. (resistance method)

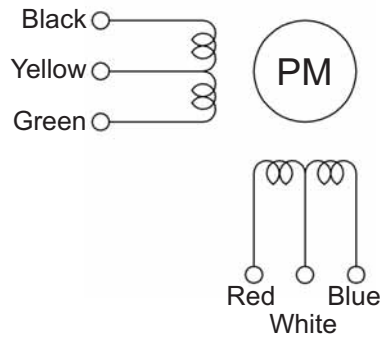
Note : Do not allow the surface temperature of the motor case to rise above 90°C during operation.

Tel : +44 (0) 1484 601002
www.rpmechatronics.co.uk

Fax : +44 (0) 1484 601061
sales@rpmechatronics.co.uk

Wiring Diagram:

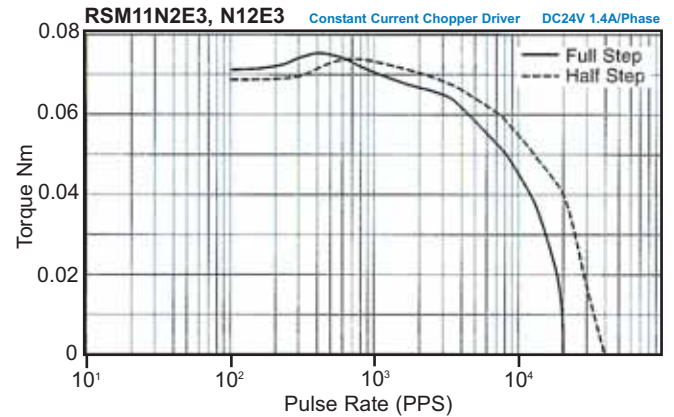
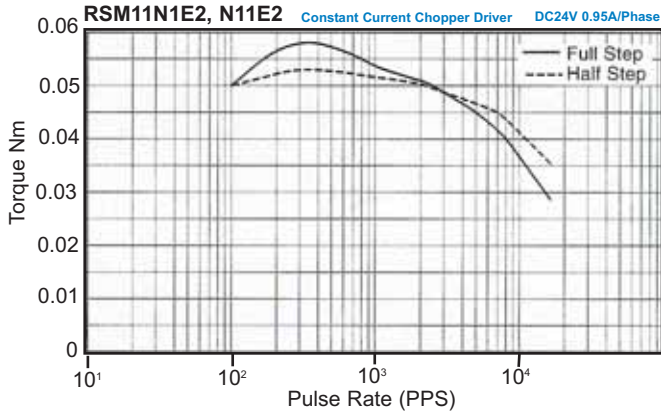
UNIPOLAR



CW rotation mounting end

Step	Black	Red	Green	Blue	Yellow	White
0	ON	ON			COM	COM
1		ON	ON		COM	COM
2			ON	ON	COM	COM
3	ON			ON	COM	COM
0	ON	ON			COM	COM

Pulse Rate vs Torque Characteristics:



Available Accessories:

AU9110 : 2-Phase Full/Half Step



Features:

- Unipolar driver
- Full/half step
- Output current range variable up to 2.0A/phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 32mm

AU9114 : 2-Phase Micro Step Driver



Features:

- Unipolar driver
- 1/8 (1600 steps) and 1/16 (3200 steps) micro steps
- Motor output current range 0.5A to 2.0A per phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 35mm

Full drive specifications available on request



Size 17 Stepper Motor 2 Phase Unipolar, 1.8° Step Angle

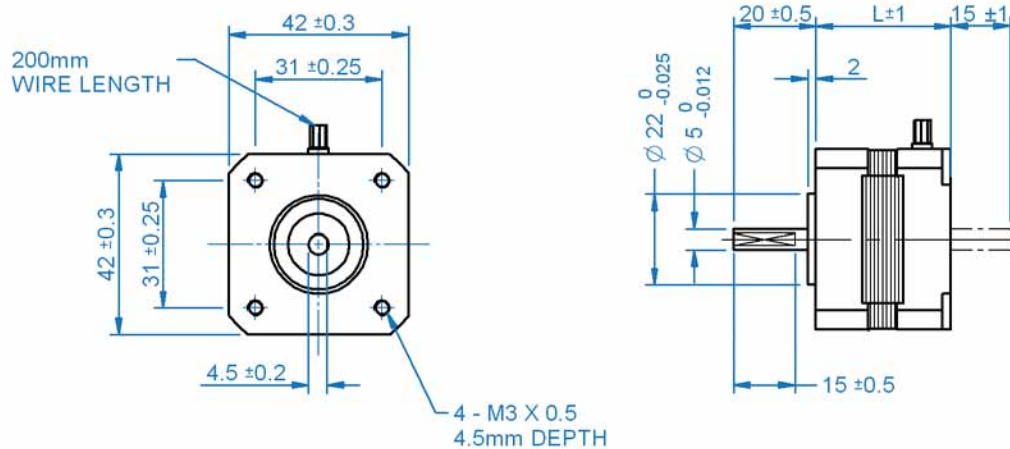
RoHS Compliant

Modified Standards Available On Request:

- Low volume, output shaft and wire modifications
- Other wiring and performance options

Associated products:

- Reli-a-Flex® couplings
- Leadscrews



All dimensions in millimetres

Type Number		Step Angle Deg.	Rated Voltage V/Phase	Rated Current A/Phase	Winding Resistance Ω/Phase	Inductance mH/Phase	Holding Torque Nm	Motor Length L	Rotor Inertia $\times 10^{-7}$ kg.m ²	Mass g
Single Shaft	Dual Shaft									
RSM17N1E1-LC	RSM17N11E1-LC	1.8	4.0	0.95	4.2	2.8	0.16	33	35	200
RSM17N2E4-LC	RSM17N12E4-LC	1.8	4.0	1.2	3.3	3.6	0.26	39	54	240
RSM17N3E9-LC	RSM17N13E9-LC	1.8	7.2	0.8	9	9.5	0.32	47	68	310

Technical Specification:

- Shaft end play0.075mm max. at load 9.8N
- Shaft radial play0.025mm max. at load 4.9N
- Insulation resistance100MΩ min. (at 500V DC)
- Dielectric strength500v AC (1 minute)
- Overhang load19.6N
- Allowable thrust load9.8N
- Operating temperature range-20 to 50°C
- Permissible temperature rise80° max. (resistance method)

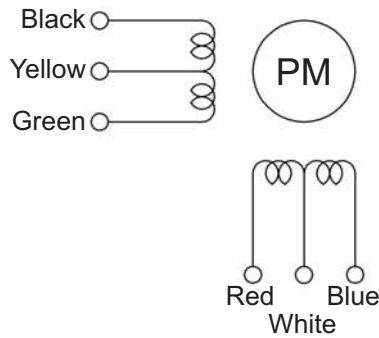
Note : Do not allow the surface temperature of the motor case to rise above 90°C during operation.

Tel : +44 (0) 1484 601002
www.rpmechatronics.co.uk

Fax : +44 (0) 1484 601061
sales@rpmechatronics.co.uk

Wiring Diagram:

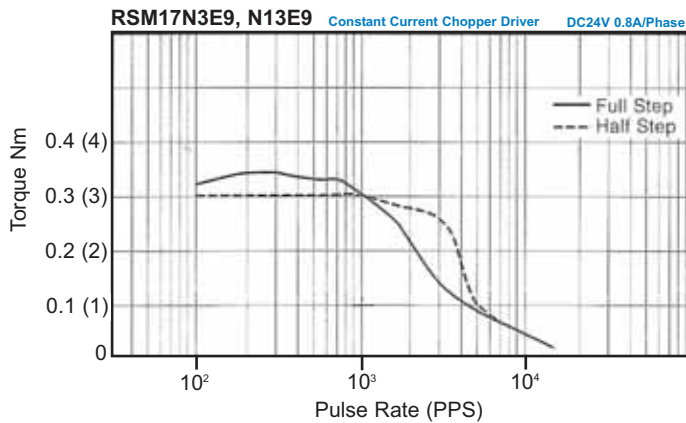
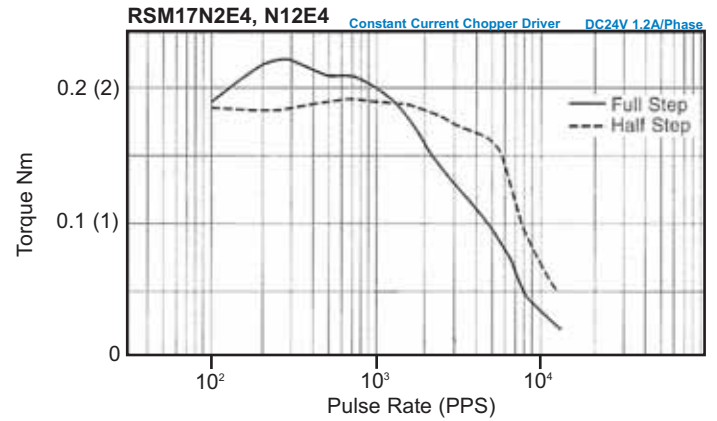
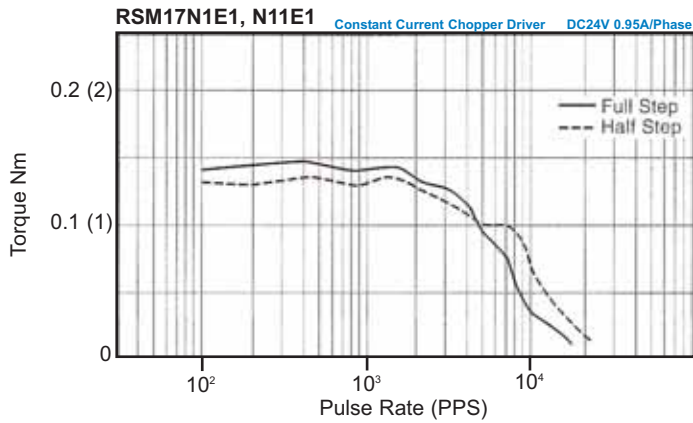
UNIPOLAR



CW rotation mounting end

Step	Black	Red	Green	Blue	Yellow	White
0	ON	ON			COM	COM
1		ON	ON		COM	COM
2			ON	ON	COM	COM
3	ON			ON	COM	COM
0	ON	ON			COM	COM

Pulse Rate vs Torque characteristics:



AU9114 : 2-Phase Micro Step Driver

Available Accessories:

AU9110 : 2-Phase Full/Half Step (Picture not shown)

Features:

- Unipolar driver
- Full/half step
- Output current range variable up to 2.0A/phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 32mm

AU9114 : 2-Phase Micro Step Driver

Features:

- Unipolar driver
- 1/8 (1600 steps) and 1/16 (3200 steps) micro steps
- Motor output current range 0.5A to 2.0A per phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 35mm

Full drive specifications available on request



Rowley Mills, Penistone Road, Lepton, Huddersfield, HD8 0LE, England.
 Tel : +44 (0) 1484 601002
 www.rpmechatronics.co.uk

Fax : +44 (0) 1484 601061
 sales@rpmechatronics.co.uk



Size 23 Stepper Motors

2 Phase Unipolar, 1.8° Step Angle

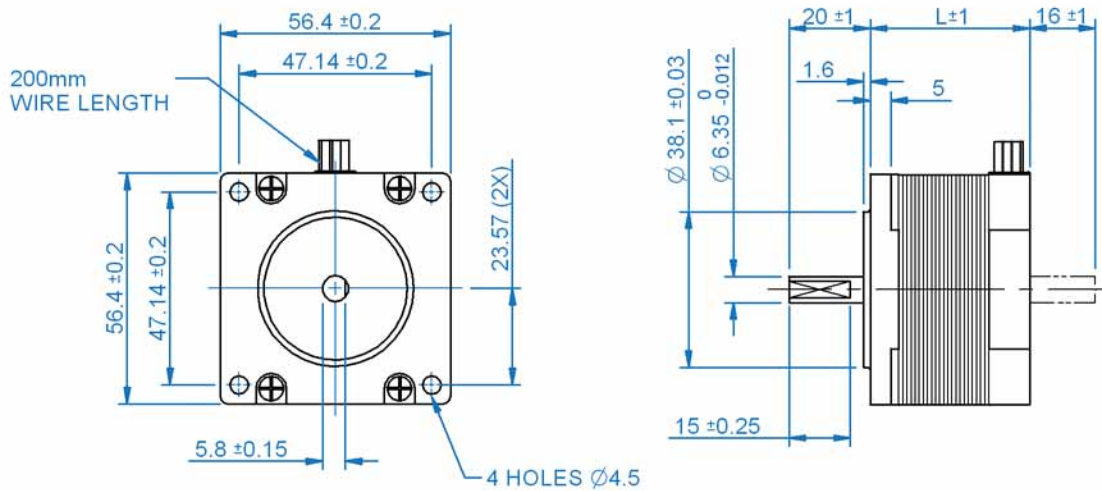
RoHS Compliant

Modified Standards Available On Request:

- Low volume, shaft and wire modifications
- Other wiring and performance options
- Bipolar wiring option available

Associated products:

- Reli-a-Flex® couplings
- Leadscrews



All dimensions in millimetres

Type Number		Step Angle Deg.	Rated Voltage V/Phase	Rated Current A/Phase	Winding Resistance Ω/Phase	Inductance mH/Phase	Holding Torque Nm	Motor Length L	Rotor Inertia x10 ⁻⁷ kg.m ²	Mass g	Winding Type
Single Shaft	Dual Shaft										
RSM23N1E2-LC	RSM23N11E2-LC	1.8	2.8	2	1.4	1.4	0.39	39	120	450	2
RSM23N2E5-LC	RSM23N12E5-LC	1.8	3.6	2	1.8	2.5	0.9	54	260	700	2

Technical Specification:

- Shaft end play0.075mm max. at load 9.8N
- Shaft radial play0.025mm max. at load 4.9N
- Insulation resistance100MΩ min. (at 500V DC)
- Dielectric strength500v AC (1 minute)
- Overhang load52.9N
- Allowable thrust load19.6N
- Operating temperature range-20 to 50°C
- Permissible temperature rise80° max. (resistance method)

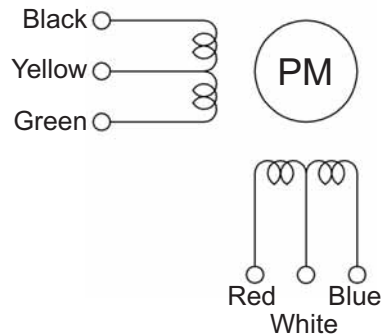
Note : Do not allow the surface temperature of the motor case to rise above 90°C during operation.

Tel : +44 (0) 1484 601002
www.rpmechatronics.co.uk

Fax : +44 (0) 1484 601061
sales@rpmechatronics.co.uk

Wiring Diagram:

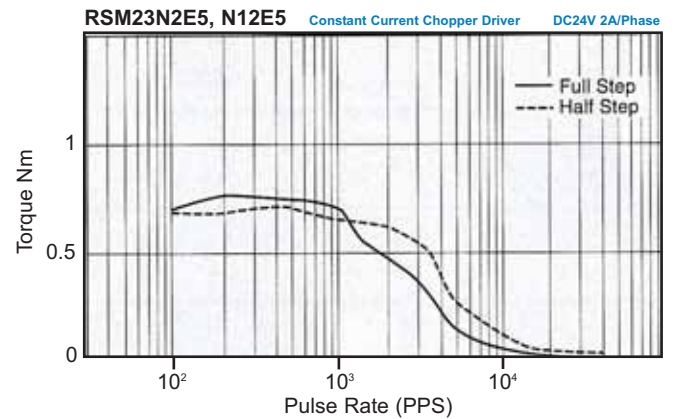
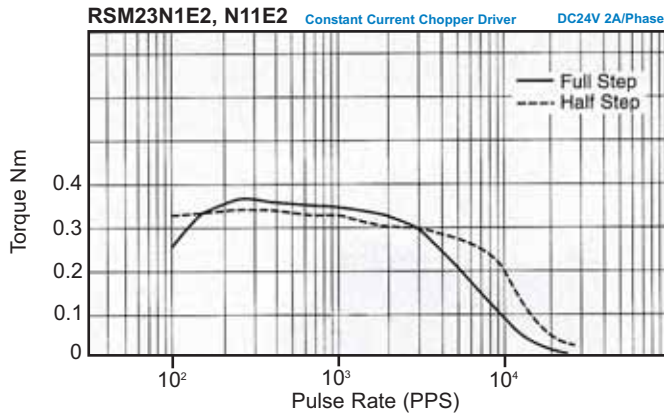
UNIPOLAR



CW rotation mounting end

Step	Black	Red	Green	Blue	Yellow	White
0	ON	ON			COM	COM
1		ON	ON		COM	COM
2			ON	ON	COM	COM
3	ON			ON	COM	COM
0	ON	ON			COM	COM

Pulse Rate vs Torque Characteristics:



Available Accessories:

AU9110 : 2-Phase Full/Half Step



Features:

- Unipolar driver
- Full/half step
- Output current range variable up to 2.0A/phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 32mm

AU9114 : 2-Phase Micro Step Driver



Features:

- Unipolar driver
- 1/8 (1600 steps) and 1/16 (3200 steps) micro steps
- Motor output current range 0.5A to 2.0A per phase
- Input options:
 - 1 pulse input (pulse string and direction signal) and
 - 2 pulse input (CW pulse string and CCW pulse string)
- Input/output photo-couplers
- Power source +24V DC, $\pm 10\%$ 3A max. (total current consumed)
- External dimensions 72 x 64 x 35mm

Full drive specifications available on request



Reliance

Precision Mechatronics LLP

Precision Motion Control Components & Mechatronic Assemblies

Rowley Mills, Penistone Road, Lepton,
Huddersfield, HD8 0LE, England
Tel: +44 (0) 1484 601000 Fax: +44 (0) 1484 601001
E-mail: sales@reliance.co.uk

www.rpmechatronics.co.uk

International Representatives:

Benelux, Denmark, Austria, Germany, Switzerland

Reliance Holland

Klaroenring 217, 4876 ZE Etten - Leur, Noord-Brabant,
Netherlands
Tel: +31 (0) 76 5040790 Fax: +31 (0) 76 5040791
e-mail: jb@reliance.co.uk

France

Reliance France

33 Rue Racine, 11000 Carcassonne, France
Tel: +33 (0) 468 470589 Fax: +33 (0) 468 471772
e-mail: ph@reliance.co.uk

Australia

Reliance Australia

21 Jubilee Street, Stones Corner, Queensland 4120,
Australia
Tel: +61 (0) 7 38478694 Fax: +61 (0) 7 38478670
e-mail: gm@reliance.co.uk