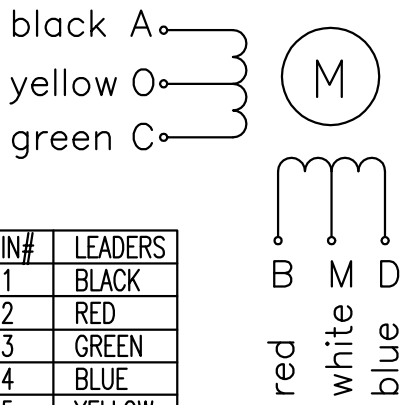
HIGH TORQUE HYBRID STEPPING MOTOR SPECIFICATIONS

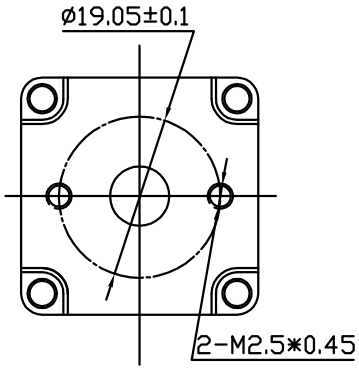
General specifications		Electrical specifications	
Step Angle	1.8Deg±5%	Rated Voltage	4.4V
Number of phase	4	Rate Current	0.95A
Insulation resistance	100Mohm Min.(500V DC)	Resistance per phase	4.6±10%ohm
Insulation class	Class B	Inductance per phase	1.8±20%mH
Rotor inertia	18g.cm^2	Holding torque	900g.cm
Weight	0.2kg	Detent torque	g.cm

Wiring Diagram

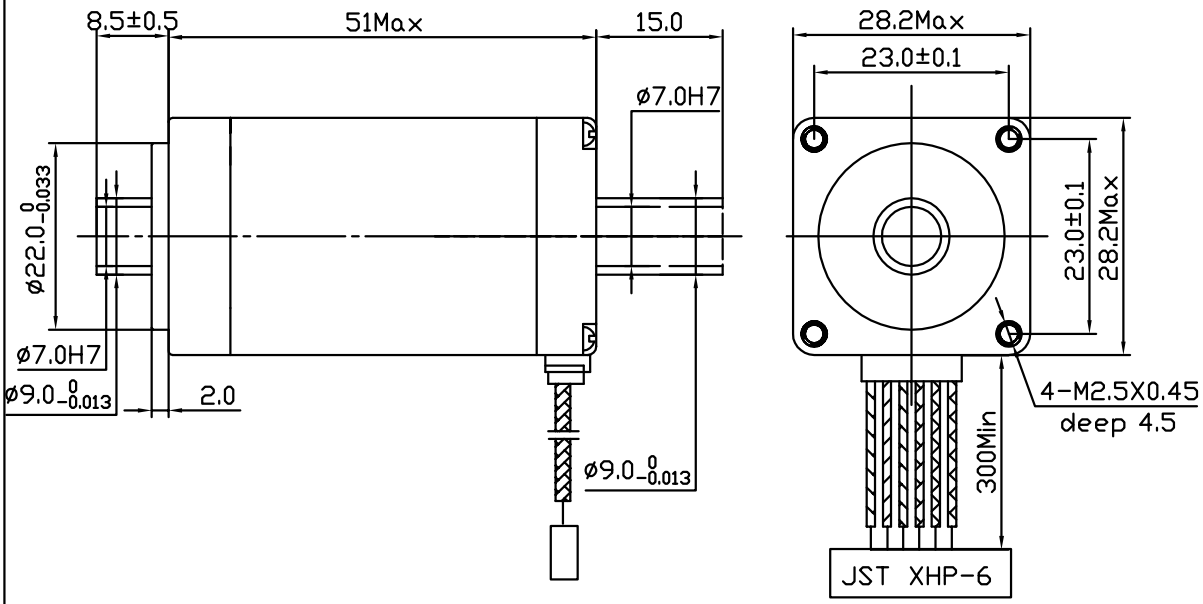


PIN#	LEADERS
1	BLACK
2	RED
3	GREEN
4	BLUE
5	YELLOW
6	WHITE

See from rear shaft



Dimension:



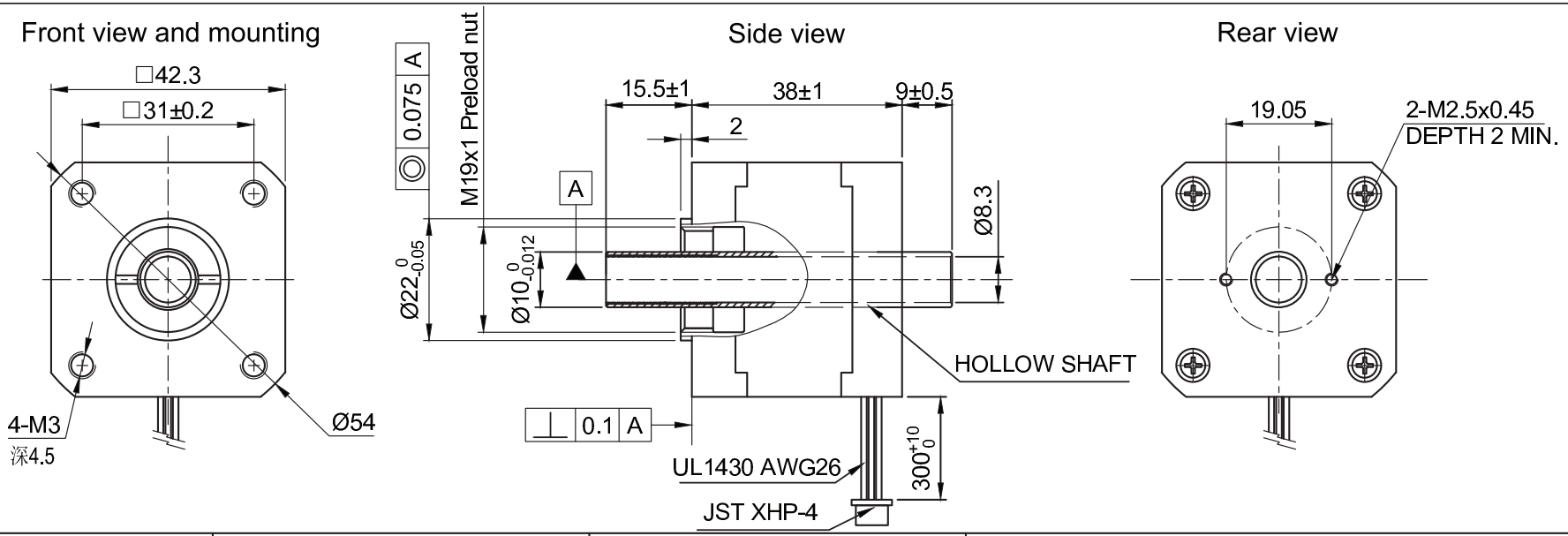
REV	QTY	NO.	SIG.	DT.
DESIGN				
CHECK				
APPROVE				

TITLE:

ST2818L1006-LA

SPECIFICATION

Nanotec



SPECIFICATION \ CONNECTION	BIPOLAR
VOLTAGE (VDC)	1.98
AMPS/PHASE	1.8
RESISTANCE/PHASE (Ohms)@25°C	1.1±15%
INDUCTANCE/PHASE (mH) @1KHz	1.85±20%
HOLDING TORQUE (Nm) [lb-in]	0.28 [2.47]
DETENT TORQUE (Nm) [lb-in]	$9.8x10^{-3}$ [$8.673x10^{-2}$]
STEP ANGLE (°)	1.8
STEP ACCURACY (NON-ACCUM)	±5%
ROTOR INERTIA (Kg-m^2) [lb-in^2]	$5.7x10^{-6}$ [$1.95X10^{-2}$]
WEIGHT (Kg) [lb]	0.24 [0.529]
TEMPERATURE RISE: MAX.80°C (MOTOR STANDSTILL; FOR 2 PHASE ENERGIZED)	
AMBIENT TEMPERATURE -10°~ 50°C [14°F ~ 122°F]	
INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)	
INSULATION CLASS B 130° [266°F]	
DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE)	
AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)	

Please regard the application noten at www.nanotec.com for further informations.

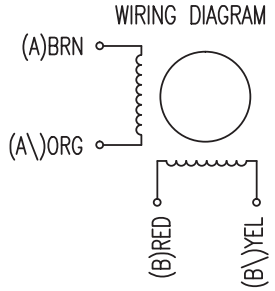
Shaft play is adjustable at the motor.

TYPE OF CONNECTION (EXTERN)		MOTOR	
PIN NO	BIPOLAR	LEADS	WINDING
1	A —	BRN	A
2	A\ —	ORG	A\
3	B —	RED	B
4	B\ —	YEL	B\

FULL STEP 2 PHASE-Ex.,
WHEN FACING MOUNTING END (X)

STEP	A	B	A\	B\		CCW
1	+	+	-	-		
2	-	+	+	-		
3	-	-	+	+		
4	+	-	-	+	CW	

WIRING DIAGRAM



REV	DESCRIPTION	DATE	APVD

Nanotec PLUG & DRIVE

ST4118M1804-L

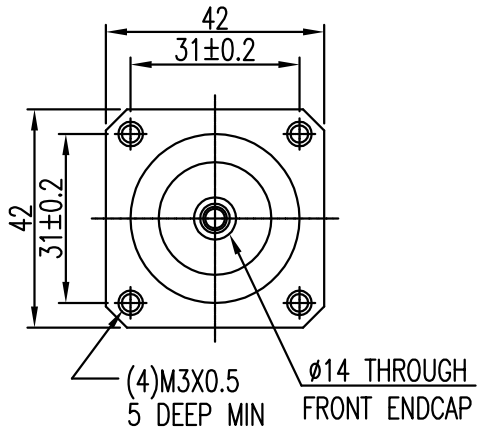
SCALE FREE		APVD		
X	±0.5	CHKD	GYQ	18.10.12
1PL	±0.2	DRN	L B	18.10.12
2PL	±0.1	SIGNATURE		DATE
ANGLE	±30'			

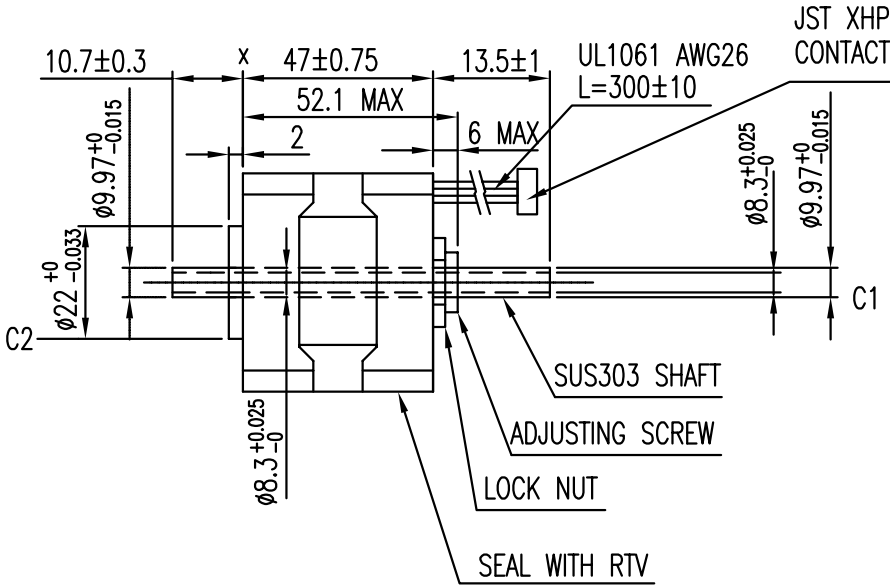
STEPPING MOTOR

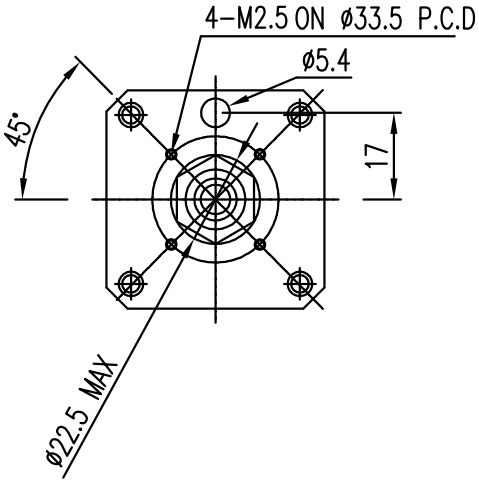
DWG.NO

ST4118M1804-L

DIMENSION (UNIT : mm)







SPECIFICATION	
RATED VOLTAGE (VM)DC	3.4
AMPS/PHASE	1.8
RESISTANCE /PHASE Rm (Ohms) @25°C	1.9 ±10%
INDUCTANCE/PHASE.mH @1KHz	1.65 ±20%
STEP ANGLE (DEG)	1.8
STEP ACCURACY (NON-ACCUM)	±5%
HOLDING TORQUE (g-cm) @1.8A/ø,2ø-Ex.	3000
ROTOR INERTIA (g-cm²)	68
WEIGHT (g)	280
INSULATION CLASS	B
INSULATION RESISTANCE	100M ohm @500VDC
DIELECTRIC STREGTH	500VAC FOR ONE MINUTE
AMBIENTTEMPERATURE	-10°C ~ +50°C

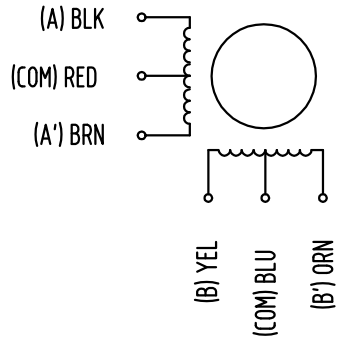
NOTES:

1. C1 DIAMETER RUNOUT TO BE 0.05 mm MAX.
2. C2 CONCENTRIC TO C1 W/IN 0.05 mm TIR.
3. X SURFACE PERPENDICULAR TO C1 W/IN 0.127 mm.
4. END CAPS TO BE BLACK PAINTED.
5. END PLAY : 0.1 MAX. WITH 9.0kg LOAD.
6. TORQUE ADJUSTING SCREW TO 1.44 kg-cm (REF) TO MEET NOTE 5.
7. TORQUE LOCKNUT TO 10.8~14.4 kg-cm.

FULL STEP 2 PHASE-Ex.,
WHEN FACING MOUNTING END (X)

STEP	A	B	A'	B'	COM	CCW
1	+	+	-	-	+DCV	↓
2	-	+	+	-		
3	-	-	+	+		
4	+	-	-	+		CW ↑

WIRING DIAGRAM



REV	DESCRIPTION	mm-dd-'yy	APVD

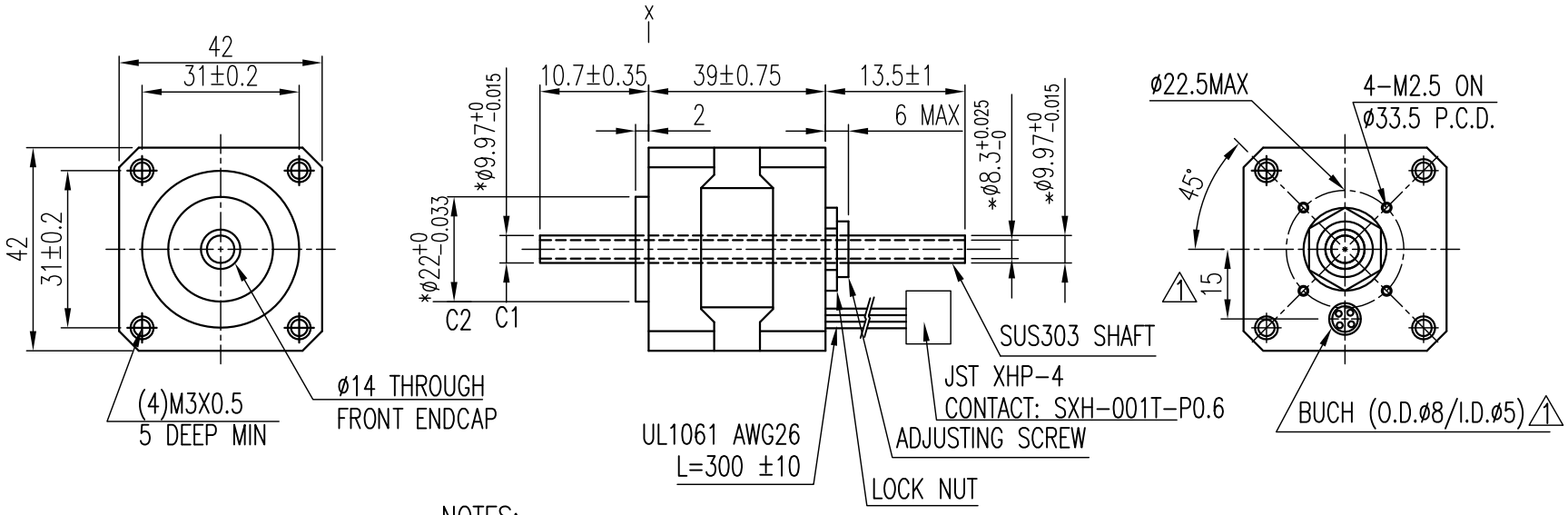
NANOTEC : ST4218L1806-LC-NEU

SCALE FREE		APVD		
X	±0.5	CHKD		
1PL	±0.2	DRN		17.11.04
2PL	±0.1	SIGNATURE		DATE
ANGLE	±30'			

STEPPING MOTOR

DWG.NO
ST4218L1806-LC-NEU_Z01

DIMENSION (UNIT : mm)



NOTES:

1. C1 DIAMETER RUNOUT TO BE 0.05 mm MAX.
2. C2 CONCENTRIC TO C1 W/IN 0.05 mm TIR.
3. X SURFACE PERPENDICULAR TO C1 W/IN 0.127 mm.
4. END CAPS TO BE BLACK PAINTED.
5. END PLAY : 0.1 MAX. WITH 9.0kg LOAD.
6. TORQUE ADJUSTING SCREW TO 1.44 kg-cm (REF) TO MEET NOTE 5.
7. TORQUE LOCKNUT TO 10.8~14.4 kg-cm.
8. * MEANS IMPORTANT ITEM.

SPECIFICATION		
RATED VOLTAGE (VM)DC	1.7	
AMPS/PHASE	1.4	
RESISTANCE /PHASE Rm (Ohms) @25°C	1.21 ±10%	*
INDUCTANCE/PHASE.mH @1KHz	2.1 ±20%	*
STEP ANGLE (DEG)	1.8	
STEP ACCURACY (NON-ACCUM)	±5%	
HOLDING TORQUE (Kg-cm) @1.4A/ø,2ø-Ex.	2.1 3	*
ROTOR INERTIA (g-cm²)	54	
WEIGHT (g)	250	
INSULATION CLASS	B	
INSULATION RESISTANCE	100M ohm @500VDC	
DIELECTRIC STREGTH	500VAC FOR ONE MINUTE	
AMBIENTTEMPERATURE	-10°C ~ +50°C	

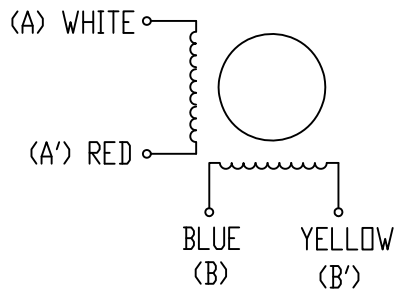
PIN NO.	LEADS
1	WHT
2	RED
3	BLU
4	YEL

2

FULL STEP 2 PHASE-Ex.,
WHEN FACING MOUNTING END (X)

STEP	A	B	A'	B'	
1	+	+	-	-	CCW
2	-	+	+	-	
3	-	-	+	+	
4	+	-	-	+	CW

* WIRING DIAGRAM



REV	DESCRIPTION	Datum	APVD
3	UNIT OF HOLDING TORQUE	23.08.10	J.W.
2	PIN-ASSIGNMENT ADD.	16.05.08	J.W.
1	NEW BUCH	28.11.07	J.W.

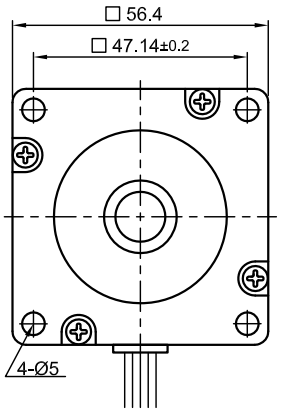
NANOTEC : ST4218M1404-LC-NEU

SCALE FREE		APVD		
X	±0.5	CHKD		
1PL	±0.2	DRN		14.12.04
2PL	±0.1	SIGNATURE		DATE
ANGLE	±30'			

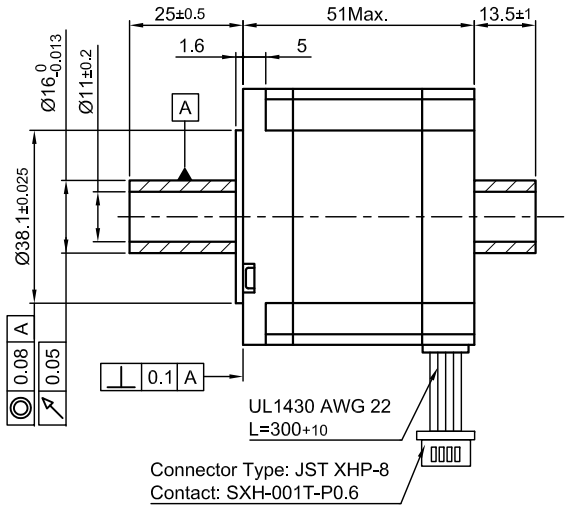
STEPPING MOTOR

DWG.NO
ST4218M1404-LC-NEU

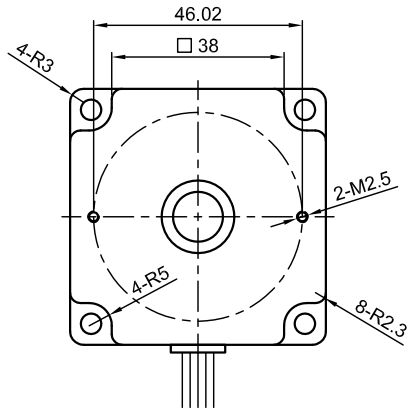
Front view and mounting



Side view



Rear view



SPECIFICATION \ CONNECTION	UNIPOLAR OR BIPOLAR-1 WINDING	BIPOLAR SERIAL	BIPOLAR PARALLEL
VOLTAGE (VDC)	2.16		
AMPS/PHASE	3.0	2.12	4.24
RESISTANCE/PHASE (Ohms)@25°C	0.72±10%	1.44±10%	0.36±10%
INDUCTANCE/PHASE (mH) @1KHz	1.1±20%	4.4±20%	1.1±20%
HOLDING TORQUE (Nm) [lb-in]	0.65 [5.75]	0.92 [8.14]	0.92 [8.14]
DETENT TORQUE (Nm) [lb-in]	0.03 [0.266]		
STEP ANGLE (°) ± ACCURACY	1.8±5% (NON-ACCUM)		
BACK-EMF (V) (300 U/min)		9.59 min.	
ROTOR INERTIA (Kg-m^2) [lb-in^2]	2.75x10^{-5} [0.094]		
WEIGHT (Kg) [lb]	0.65 [1.43]		

TEMPERATURE RISE: MAX.80°C (MOTOR STANDSTILL; FOR 2 PHASE ENERGIZED)

AMBIENT TEMPERATURE -10°~ 50°C [14°F ~ 122°F]

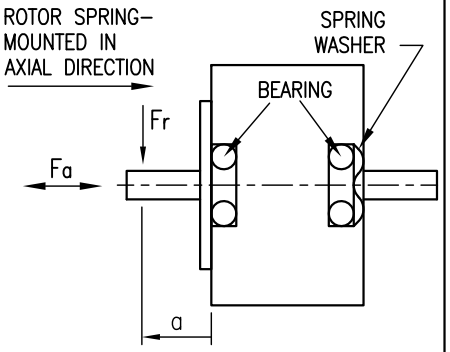
INSULATION RESISTANCE 100 MOhm (UNDER NORMAL TEMPERATURE AND HUMIDITY)

INSULATION CLASS B 130° [266°F]

DIELECTRIC STRENGTH 500VAC FOR 1 MIN. (BETWEEN THE MOTOR COILS AND THE MOTOR CASE)

AMBIENT HUMIDITY MAX. 85% (NO CONDENSATION)

PERMISSIBLE RADIAL+AXIAL FORCE



AXIAL-FORCE Fa (N)	Fa=15			
DISTANCE a (mm)	5	10	15	20
RADIAL-FORCE Fr (N)	130	90	70	52

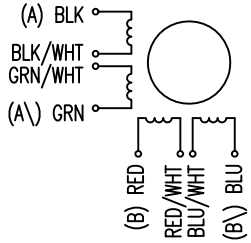
	AXIAL	RADIAL
SHAFT PLAY (mm)	0.08	0.02
AT LOAD MAX: (N)	4.5	4.5

TYPE OF CONNECTION (EXTERN) UNIPOLAR	BIPOLAR 1WINDING	BIPOLAR SERIAL	BIPOLAR PARALLEL	MOTOR CONNECTOR PIN NO.	LEADS	WINDING
A	A	A	A	1	BLK	A
COM				3	BLK/WHT	
	A			2	GRN/WHT	
A\		A\	A\	4	GRN	A\
B	B	B	B	5	RED	B
COM				7	RED/WHT	
	B			6	BLU/WHT	
B\		B\	B\	8	BLU	B\

FULL STEP 2 PHASE-Ex.,
WHEN FACING MOUNTING END (X)

STEP	A	B	A\	B\		CCW
1	+	+	-	-		
2	-	+	+	-		
3	-	-	+	+		
4	+	-	-	+	CW	

WIRING DIAGRAM



REV	DESCRIPTION	DATE	APVD

Nanotec® PLUG & DRIVE

ST5918S3008-L2

SCALE FREE	
X	±0.5
1PL	±0.2
2PL	±0.1
ANGLE	±30'

APVD	S.H.	17.12.10
CHKD		
DRN	J.W.	17.12.10
SIGNATURE		DATE

STEPPING MOTOR

DWG.NO ST5918S3008-L2