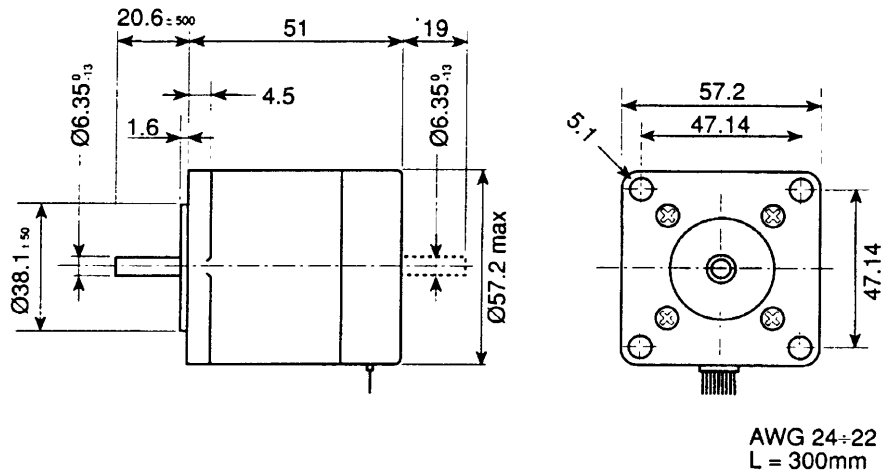
ASTROSYN

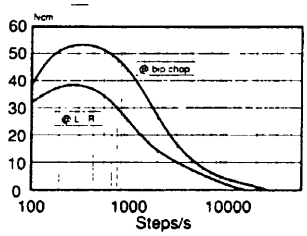
TECHNICAL DATA



AWG 24÷22
L = 300mm

Dimensions in mm Tolerances in micrometer

Specifications		Y163/Y164
Step angle		1.8°
Step angle accuracy	%	5
Rated phase current	A	1.0
Phase resistance	Ω	5
Phase inductance	mH	9.5
Holding torque*	Ncm	50
Detent torque	Ncm	6
Rotor inertia	gr cm²	124
Mass	Kg	0.5
Insulation class		B
* Two phases "ON"		



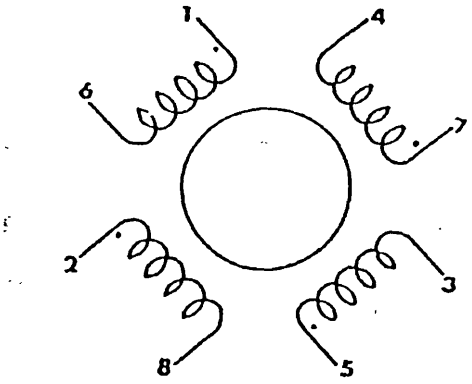
DRIVE BIPOLAR CHOPPER 35V - 1.4 A/ph
DRIVE UNIPOLAR L/R 35V - Rs =29 OHM

The Old Courthouse, New Road Avenue, Chatham, Kent, ME4 4QJ. Telephone Medway (01634) 815175 Fax (01634) 826552

ASTROSYN STEPPER MOTOR TYPE Y163/4 **TECHNICAL DATA**

NEW CONNECTION

UNIPOLAR	TERMINAL	COLOUR
$\phi 1$	1	ORANGE
$\overline{\phi 1}$	3	YELLOW
$\phi 1$ COMMON	5 & 6	BROWN-RED - (LINK)
$\phi 2$	2	BLUE
$\overline{\phi 2}$	4	GREEN
$\phi 2$ COMMON	7 & 8	BLACK-WHITE - (LINK)
BIPOLAR SERIES		
$\phi 1$	1	ORANGE
$\overline{\phi 1}$	3	YELLOW
$\phi 2$	2	BLUE
$\overline{\phi 2}$	4	GREEN
ISOLATE -(LINK)	5 & 6	BROWN-RED
ISLOATE -(LINK)	7 & 8	BLACK-WHITE
BIPOLAR PARALLEL		
$\phi 1$	1 & 5	BROWN-ORANGE
$\overline{\phi 1}$	3 & 6	RED-YELLOW
$\phi 2$	2 & 7	BLACK-BLUE
$\overline{\phi 2}$	4 & 8	GREEN-WHITE



REVISED CONNECTION DETAILS FOR STEPPER MOTOR TYPE Y163/4
AS FROM PRODUCTION BATCH RECEIVED 22.04.97

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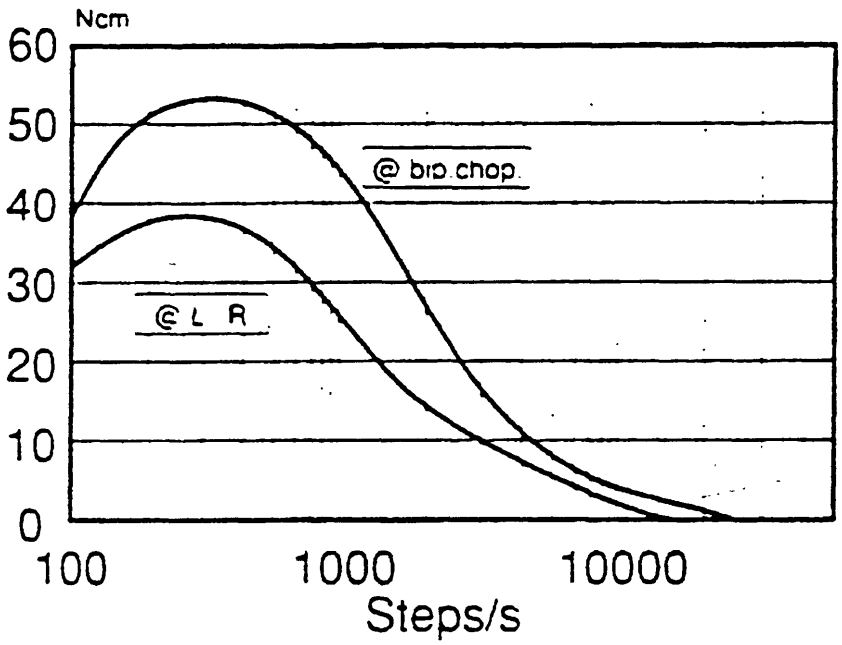
STEPPER MOTOR Y163

PERFORMANCE CHARACTERISTICS FOR UNIPOLAR AND BIPOLAR DRAWING.



DRIVE: BIPOLAR CHOPPER 35V - 1.4 A/ph
DRIVE: UNIPOLAR L/R 35V - Rs =29 OHM

FROM THE DATA SHEET YOU WILL SEE THAT THE MOTOR HAS A RESISTANCE PER PHASE OF 5 OHMS. IF A RESISTANCE OF 29 0HMS IS PLACED IN SERIES WITH THE WINDING RESISTANCE, WE HAVE A TOTAL OF 34 OHMS IN THE CIRCUIT. IF 35 VOLTS IS APPLIED THE CIRCUIT WILL DRAW 1 AMP APPROXIMATELY. IF THE AVAILABLE CURRENT IS LIMITED TO LESS THAN 1 AMP, THE AVAILABLE TORQUE FROM THE MOTOR WILL BE ATTENUATED.

WE CAN ASSUME THAT THE SAME SITUATION WILL EXIST IN A PULSE WIDTH MODULATED UNIPOLAR DRIVE CIRCUIT i.e. RESTRICTING THE CURRENT AVAILABLE TO THE MOTOR RESULTS IN THE MOTOR HAVING TO PERFORM CLOSER TO ITS LIMIT THEREFORE LESS POWER TO DISSIPATE ELSEWHERE.