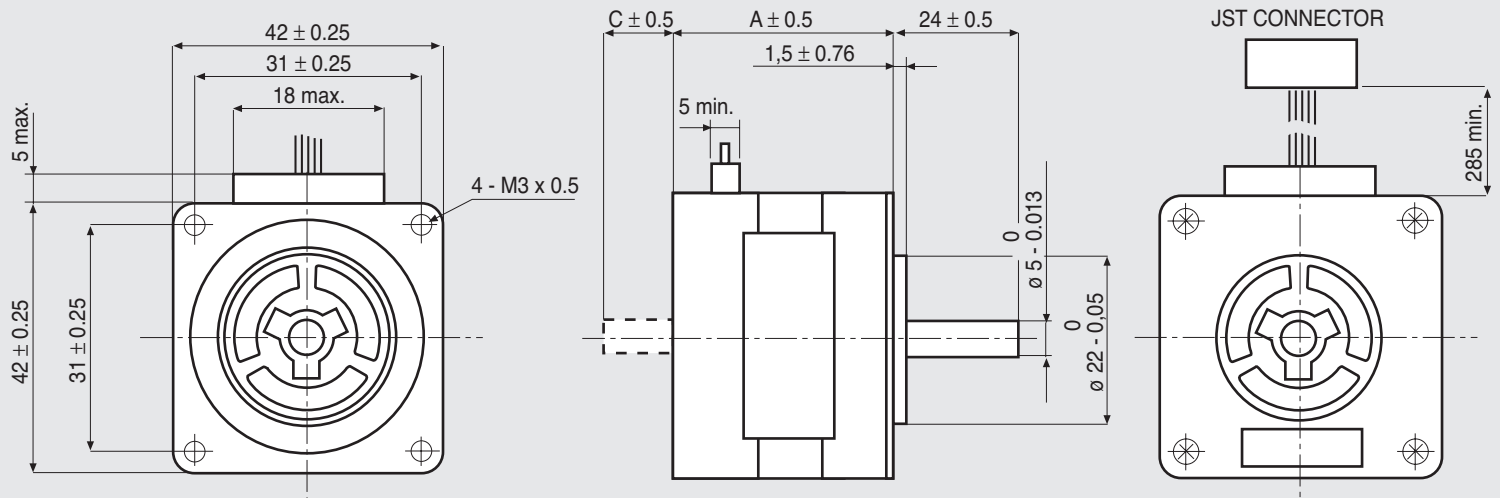


STANDARD MOTORS	HOLDING TORQUE (Ncm.)	TECHNICAL DATA (page)	SPEED / TORQUE CURVES (page)
SIZE 1.7"			
103-546-55500	12.5	3	--
103-546-5342	19	3	13
103-547-52500	25	3	13
SIZE 2.2"			
103-770-6	62	4	13
103-770-1640	62	4	13
103-G770-2241	60	4	13
103-714-0150	109	5	13 - 14
SIZE 3.4"			
103-807-6241	170	6	14
103-807-6341	170	6	14
103-810-6	275	7	14
103-814-6541	345	7	14
103-845-6741	510	8	15
103-845-67S1	510	9	--
103-845-67S41	510	10	--
SIZE 4.2"			
103-8932-6451	1330	11	15-16
103-8960-6551	2060	11	16
H SERIES MOTORS			
SIZE 1.7"			
103-H548-04500	37	18	28
SIZE 50 mm.			
103-H6701-0140	38	19	28
103-H6703-0440	68	19	28
SIZE 2.2"			
103-H7123-0140	110	20	28
103-H7123-0440	110	20	--
103-H7123-0740	110	20	28
103-H7123-1740	110	20	29
103-H7126-0140	165	21	29
103-H7126-0740	165	21	29
103-H7126-1740	165	21	29
103-H7126-6640	165	22	29
SIZE 60 mm.			
103-H7823-1741	300	23	29
SIZE 3.4"			
103-H8222-63XE42	560	24	--
103-H8221-6241	300	25	29
103-H8222-6340	560	25	30
103-H8223-6540	790	25	30
SIZE 4.2"			
103-H89222-6541	1620	26	30-31
103-H89223-6641	2460	26	31

Catalogo de motores PASO A PASO



MOTOR CONNECTOR IS JST mod. EHR-4 / EHR-6 A 4 / 6 POLES FEMALE.
FOR CONNECTION USE JST mod. B4B-EH-A / B6B-EH-A MALE CONNECTOR.

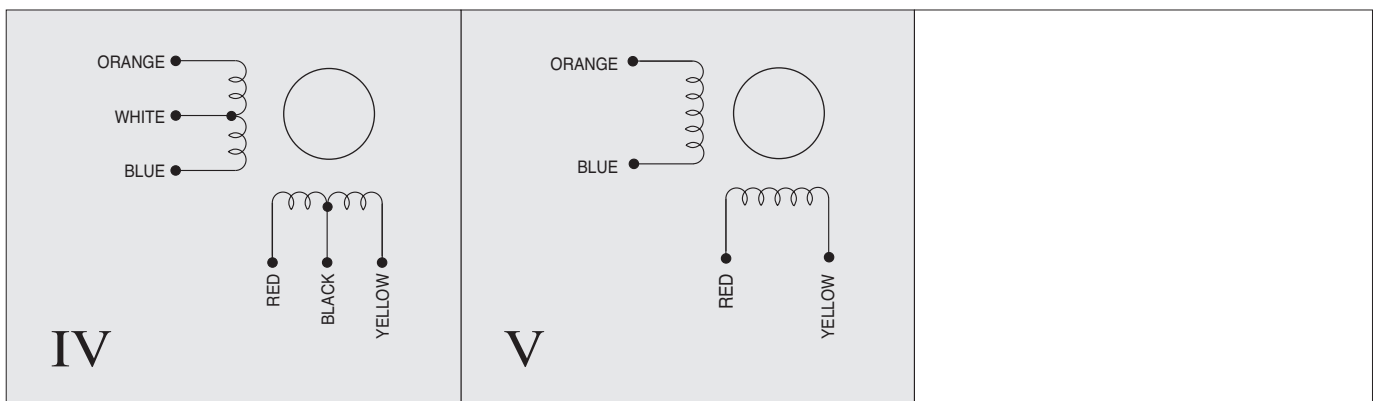
MODEL	A	C
103 - 546 - 55500	32.5	
103 - 546 - 5342	32.5	
103 - 547 - 52500	36.5	
103 - 547 - 52300	36.5	15

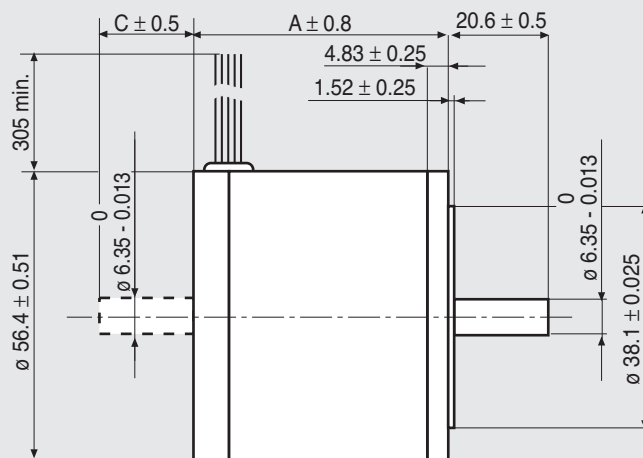
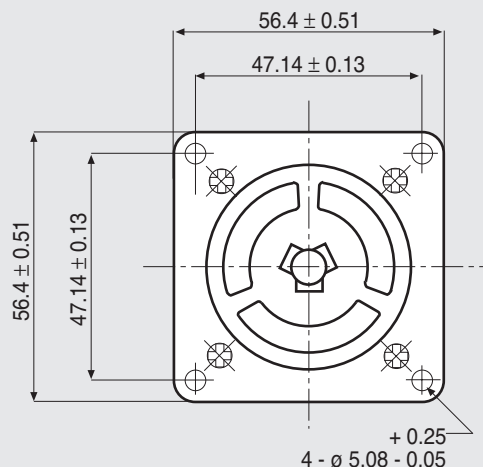
CHARACTERISTICS

MODEL	103 - 546 - 55500	103 - 546 - 5342	103 - 547 - 52500 (103 - 547 - 52300)
BASIC STEP ANGLE	1.8° ± 0.09°	1.8° ± 0.09°	1.8° ± 0.09°
BIPOLEAR PARALLEL CURRENT (Amp)	0.2	0.42 ^(*)	0.7 ^(*)
UNIPOLAR CURRENT (Amp)		0.6	1.0
RESISTANCE (Ohm)	37.5	6.7	3.15
INDUCTANCE (mH)	52	5.4	3
BIPOLEAR HOLDING TORQUE (Ncm)	12.5	19	25
UNIPOLAR HOLDING TORQUE (Ncm)		14.5	19
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	20	30	43
THEORETICAL ACCELERATION (rad x sec. ⁻²)	63000	63000	59000
BACK E.M.F. (V/Krpm)	47	18	14
MASS (Kg)	0.2	0.2	0.24
LEADS CODE	V	IV	IV

Codes between brackets refer to double shaft model.

^(*) Series connection





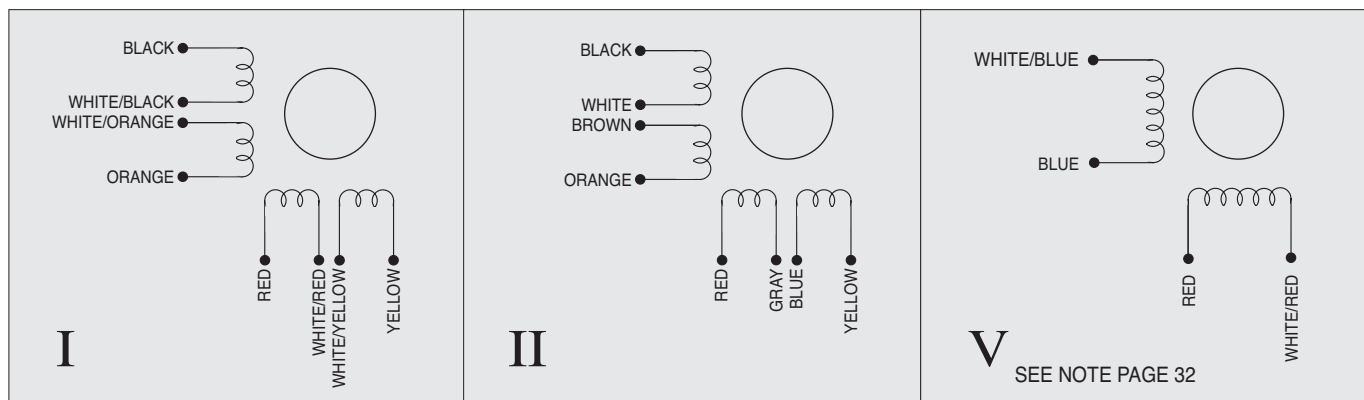
MODEL	A	C
103 - 770 - 6	50.8	
103 - 770 - 61	50.8	19.05
103 - G770 - 2241	50.8	
103 - G770 - 2221	50.8	19.05
103 - 770 - 1640	50.8	

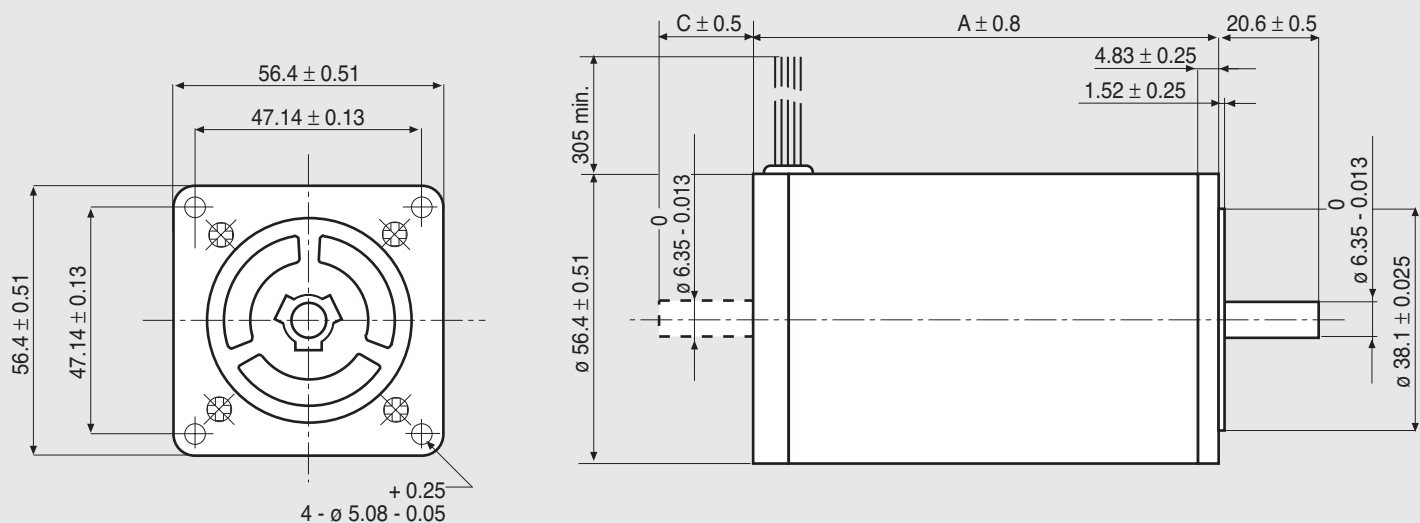
CHARACTERISTICS

MODEL	103 - 770 - 6 (103 - 770 - 61)	103 - G770 - 2241 (103 - G770 - 2221)	103 - 770 - 1640
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLAR PARALLEL CURRENT (Amp)	1.41 (*)	2.82 (*)	1.41
UNIPOLAR CURRENT (Amp)	1.0	2.0	
RESISTANCE (Ohm)	5.1	1.4	2.6
INDUCTANCE (mH)	9.0	2.2	9.0
BIPOLAR HOLDING TORQUE (Ncm)	62	60	62
UNIPOLAR HOLDING TORQUE (Ncm)	49	47	
ROTOR INERTIA ($\text{Kgm}^2 \times 10^{-7}$)	105	105	105
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	59000	52000	59000
BACK E.M.F. (V/Krpm)	37	17	33
MASS (Kg)	0.54	0.54	0.54
LEADS CODE	I	I (II)	V

Codes between brackets refer to double shaft model.

(*) Parallel connection.



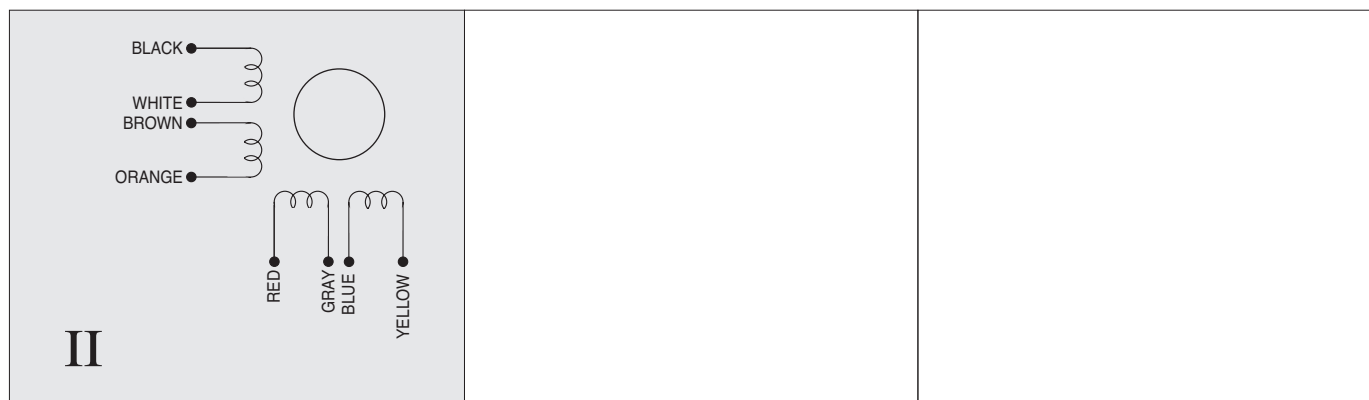


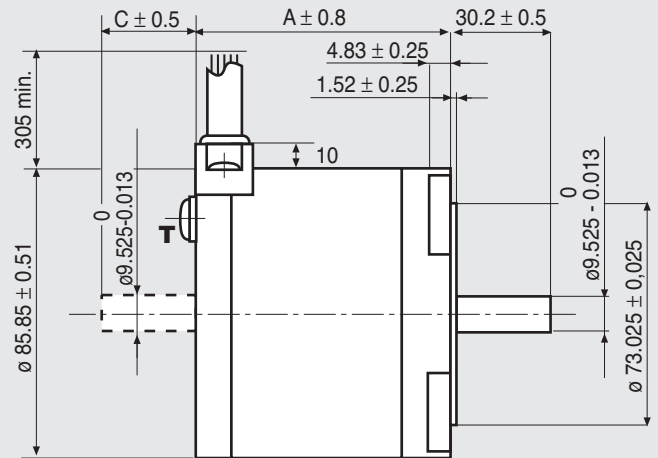
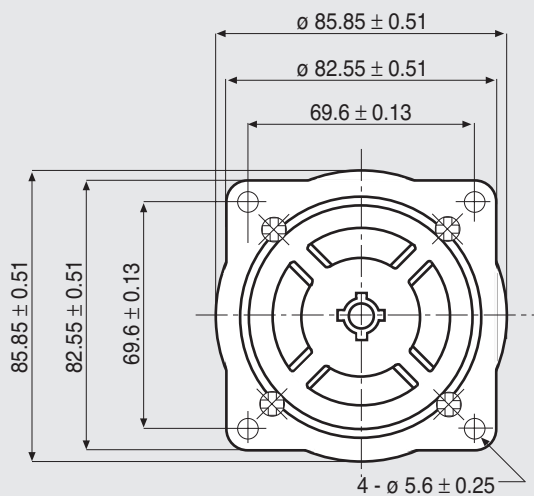
MODEL	A	C
103 - 714 - 0150	76.2	
103 - 714 - 0111	76.2	19.5

CHARACTERISTICS

MODEL	103 - 714 - 0150 (103 - 714 - 0111)
BASIC STEP ANGLE	1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT (Amp)	2.55
UNIPOLAR CURRENT (Amp)	1.8
RESISTANCE (Ohm)	2.6
INDUCTANCE (mH)	4.9
BIPOLAR HOLDING TORQUE (Ncm)	109
UNIPOLAR HOLDING TORQUE (Ncm)	88
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	210
THEORETICAL ACCELERATION (rad x sec. ⁻²)	51000
BACK E.M.F. (V/Krpm)	36
MASS (Kg)	0.95
LEADS CODE	II

Codes between brackets refer to double shaft model.





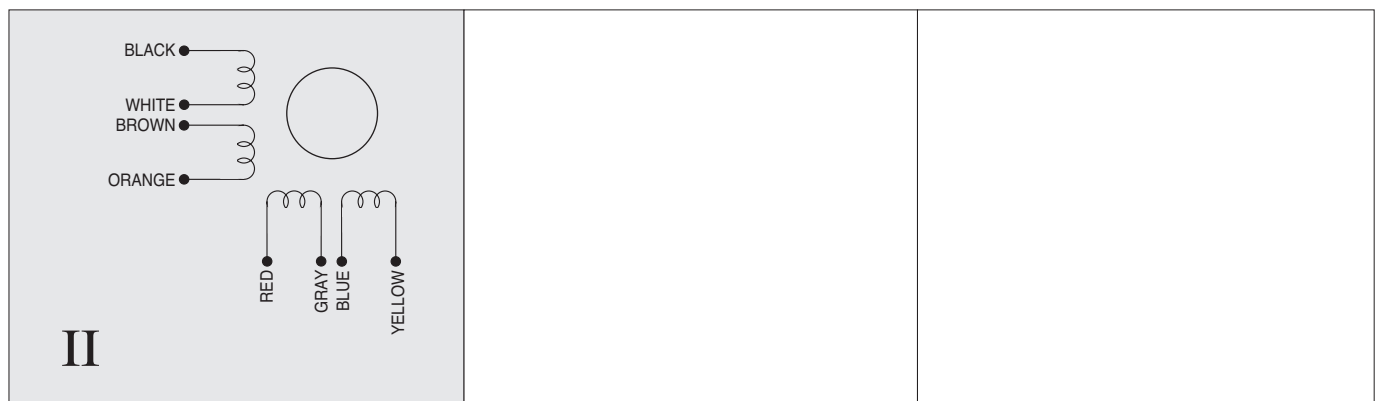
WIRES ARE HOUSED IN A VINYL
TUBE.
T IS THE EARTH TERMINAL

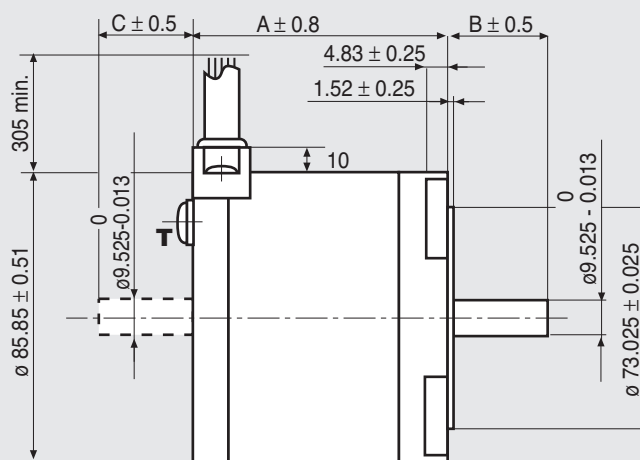
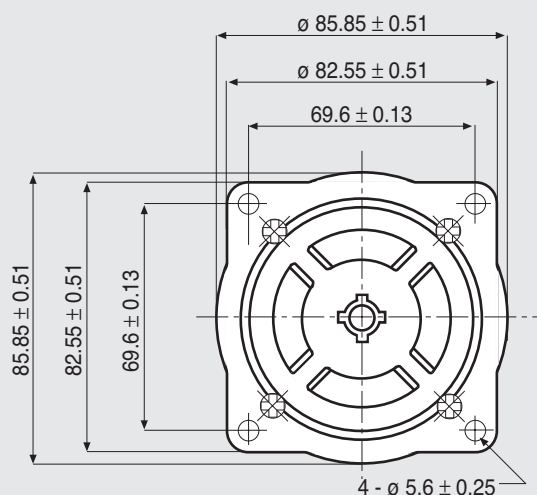
MODEL	A	C
103 - 807 - 6241	61	
103 - 807 - 6341	61	
103 - 807 - 6311	61	28.5

CHARACTERISTICS

MODEL	103 - 807 - 6241	103 - 807 - 6341 (103 - 807 - 6311)
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLEAR PARALLEL CURRENT (Amp)	2.7	4.3
UNIPOLAR CURRENT (Amp)	1.9	3.05
RESISTANCE (Ohm)	2.65	0.95
INDUCTANCE (mH)	8.2	3.8
BIPOLEAR HOLDING TORQUE (Ncm)	170	170
UNIPOLAR HOLDING TORQUE (Ncm)	135	135
ROTOR INERTIA ($\text{Kgm}^2 \times 10^{-7}$)	560	560
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	30000	30000
BACK E.M.F. (V/Krpm)	53	33
MASS (Kg)	1.4	1.4
PROTECTION DEGREE	IP43	IP43
LEADS CODE	II	II

Codes between brackets refer to double shaft model.





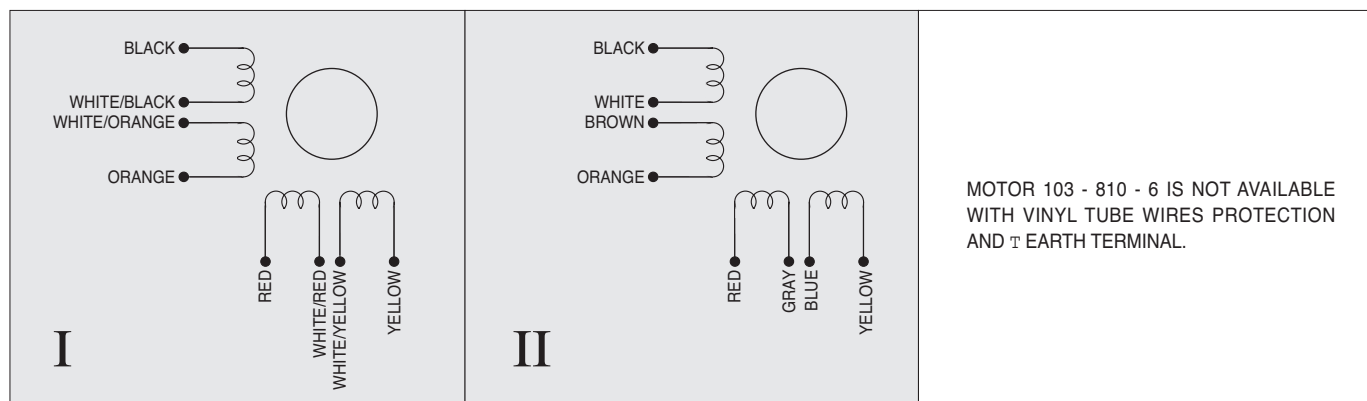
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL

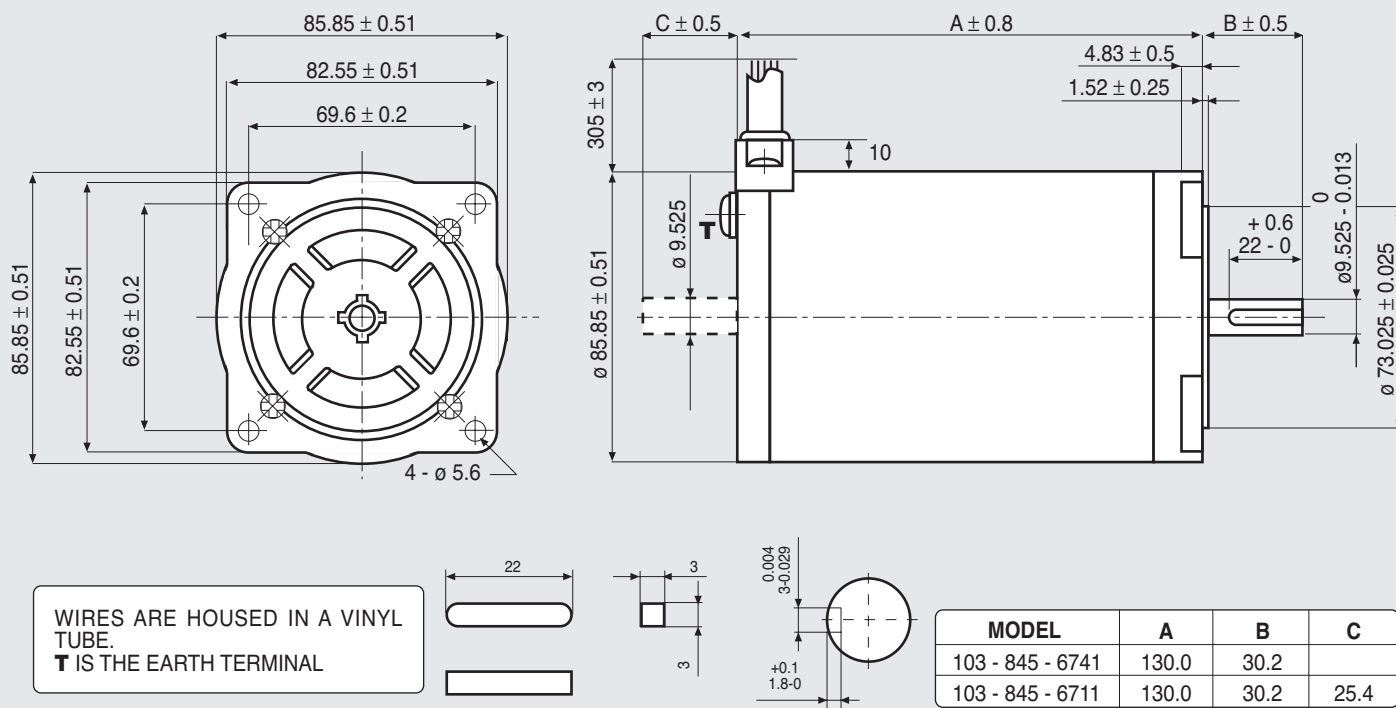
MODEL	A	B	C
103 - 810 - 6	93.5	31.8	
103 - 814 - 6541	91.0	30.2	
103 - 814 - 6511	91.0	30.2	30.2

CHARACTERISTICS

MODEL	103 - 810 - 6	103 - 814 - 6541 (103 - 814 - 6511)
BASIC STEP ANGLE	1.8° ± 0.09°	1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT (Amp)	5.6	6.5
UNIPOLAR CURRENT (Amp)	4.0	4.6
RESISTANCE (Ohm)	0.75	0.55
INDUCTANCE (mH)	4.5	2.7
BIPOLAR HOLDING TORQUE (Ncm)	275	345
UNIPOLAR HOLDING TORQUE (Ncm)	220	275
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	900	1120
THEORETICAL ACCELERATION (rad x sec. ⁻²)	30000	30500
BACK E.M.F. (V/Krpm)	41	44
MASS (Kg)	2.2	2.5
PROTECTION DEGREE		IP43
LEADS CODE	I	II

Codes between brackets refer to double shaft model.

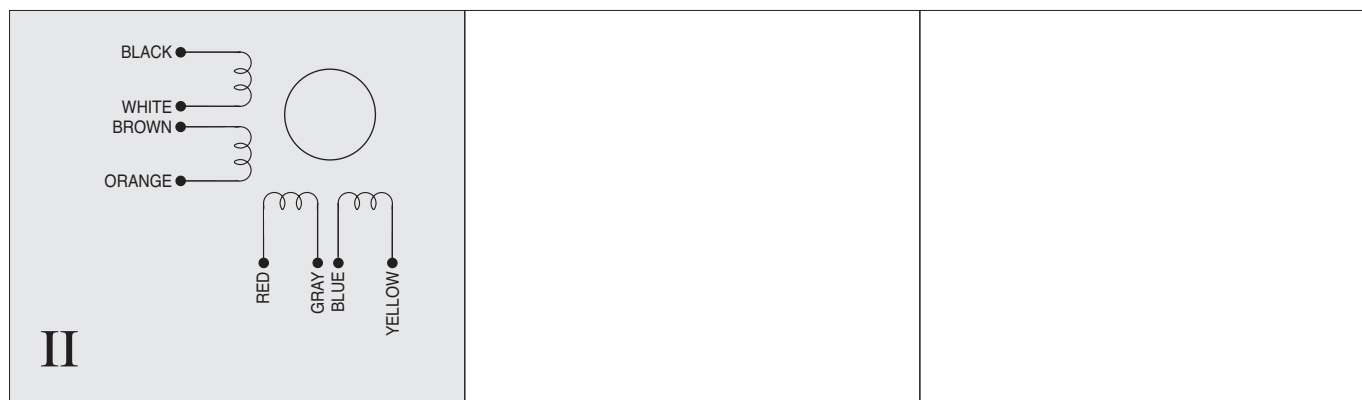


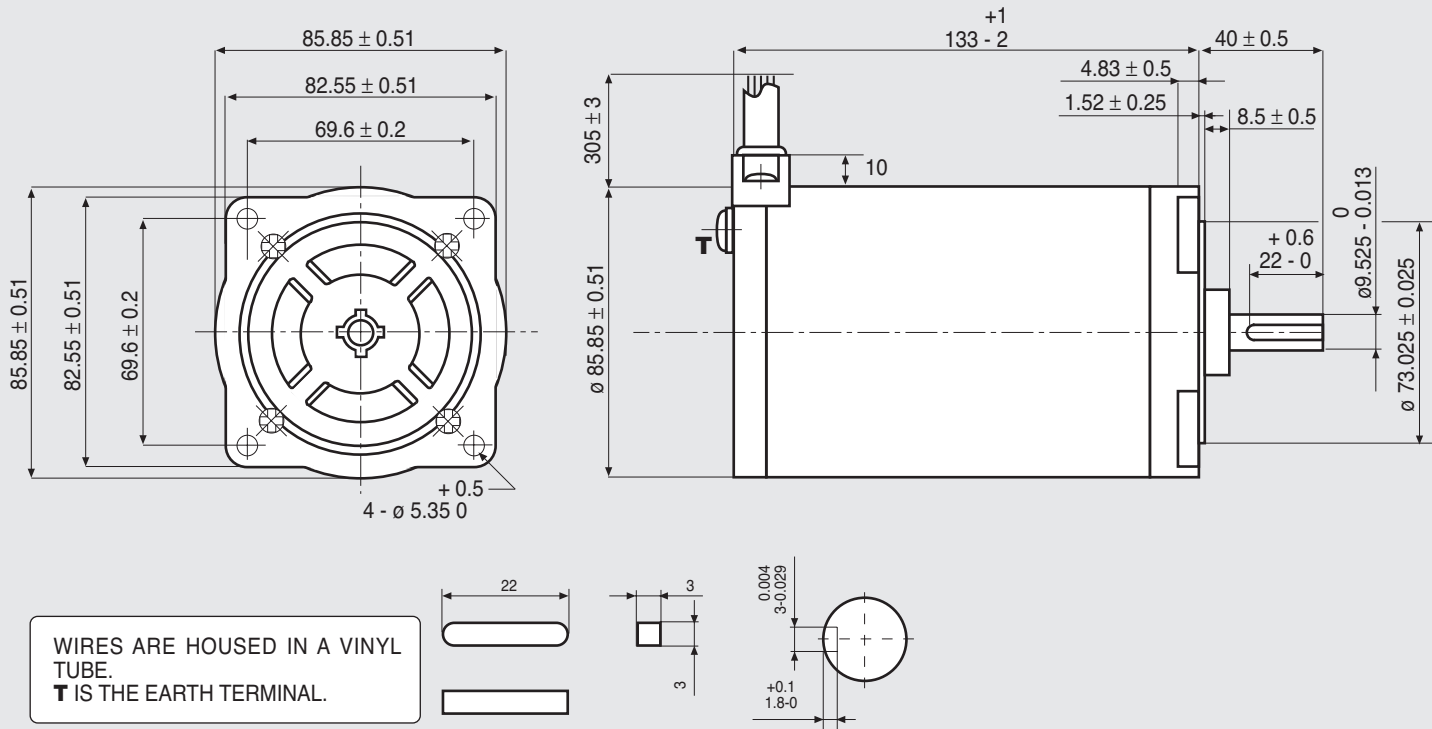


CHARACTERISTICS

MODEL	103 - 845 - 6741 (103 - 845 - 6711)
BASIC STEP ANGLE	1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT (Amp)	9.5
UNIPOLAR CURRENT (Amp)	6.7
RESISTANCE (Ohm)	0.45
INDUCTANCE (mH)	2.0
BIPOLAR HOLDING TORQUE (Ncm)	510
UNIPOLAR HOLDING TORQUE (Ncm)	410
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	1550
THEORETICAL ACCELERATION (rad x sec. ⁻²)	32900
BACK E.M.F. (V/Krpm)	46
MASS (Kg)	3.6
PROTECTION DEGREE	IP43
LEADS CODE	II

Codes between brackets refer to double shaft model.

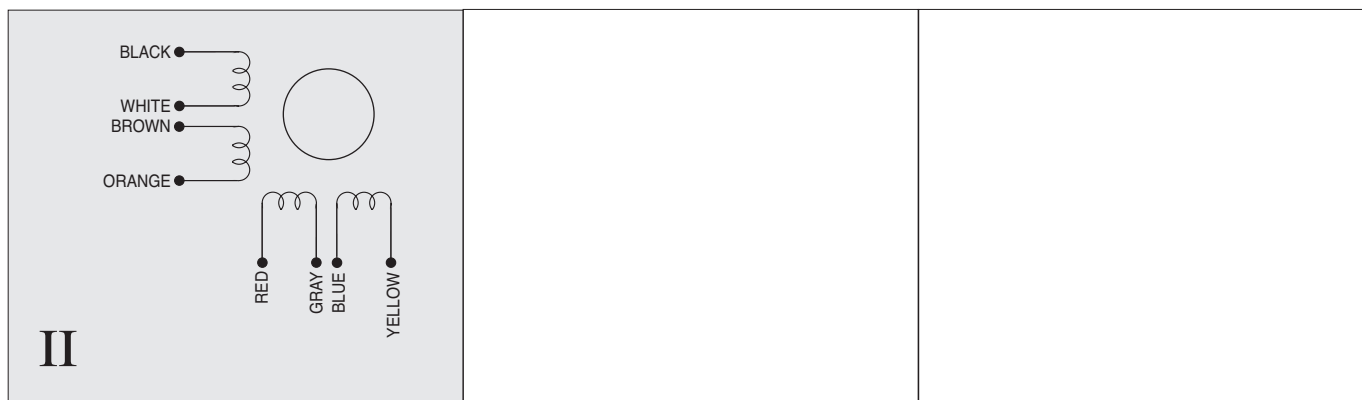


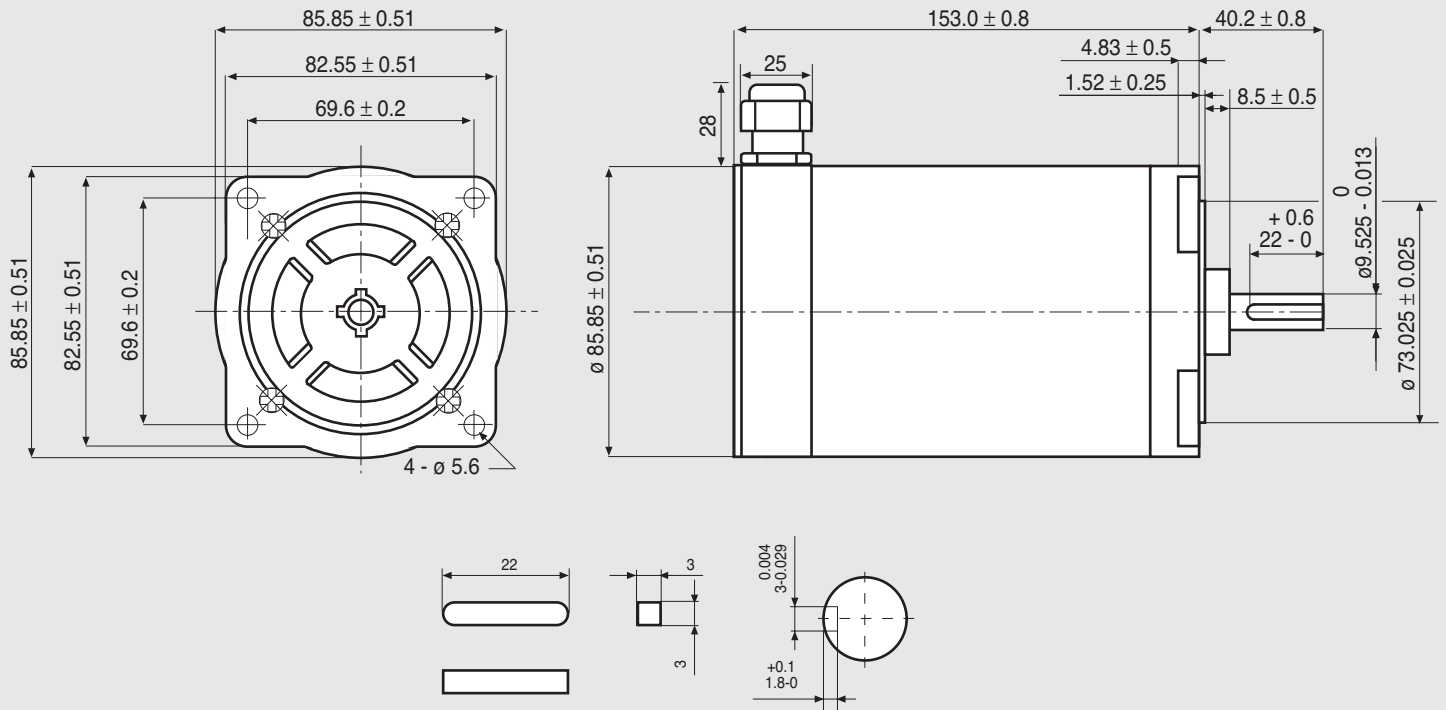


CHARACTERISTICS

MODEL	103 - 845 - 67S1
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$
BIPOLAR PARALLEL CURRENT (Amp)	9.5
UNIPOLAR CURRENT (Amp)	6.7
RESISTANCE (Ohm)	0.45
INDUCTANCE (mH)	2.0
BIPOLAR HOLDING TORQUE (Ncm)	510
UNIPOLAR HOLDING TORQUE (Ncm)	410
ROTOR INERTIA ($\text{Kgm}^2 \times 10^{-7}$)	1550
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	32900
BACK E.M.F. (V/Krpm)	46
MASS (Kg)	3.6
PROTECTION DEGREE	IP55
LEADS CODE	II

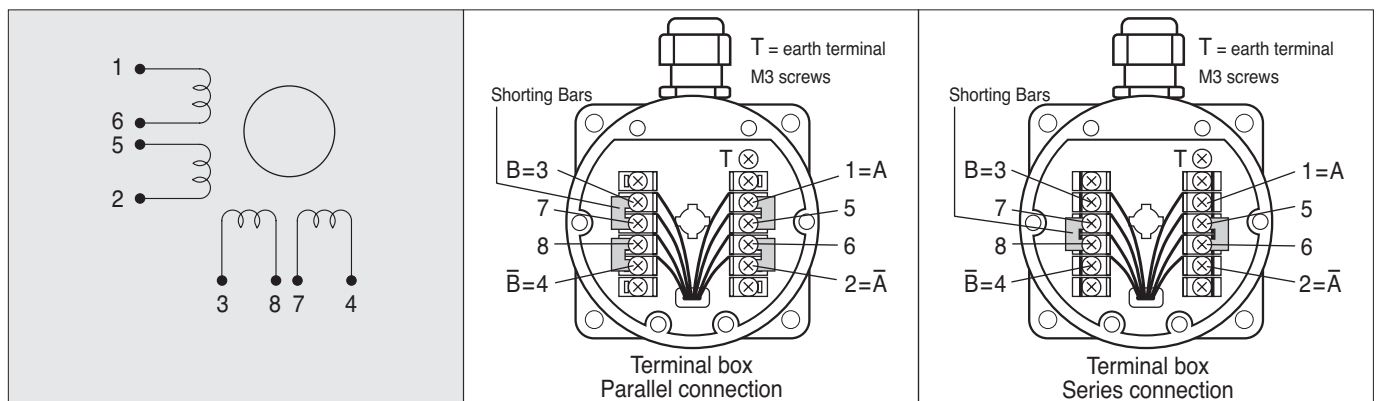
VARITEL INGENIERIA ELECTRONICA

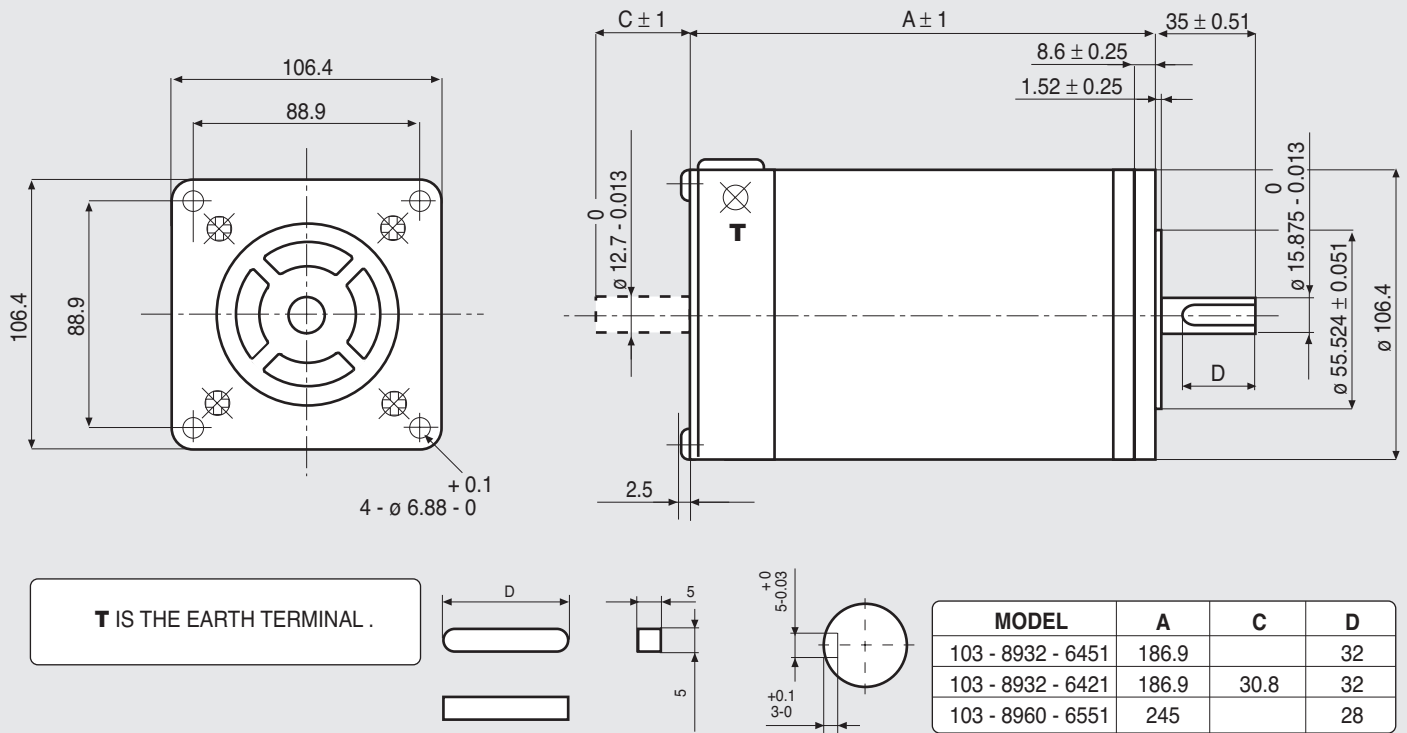




CHARACTERISTICS

MODEL		103 - 845 - 67S41
BASIC STEP ANGLE		1.8° ± 0.09°
BIPOLAR PARALLEL CURRENT	(Amp)	9.5
UNIPOLAR CURRENT	(Amp)	6.7
RESISTANCE	(Ohm)	0.45
INDUCTANCE	(mH)	2.0
BIPOLAR HOLDING TORQUE	(Ncm)	510
UNIPOLAR HOLDING TORQUE	(Ncm)	410
ROTOR INERTIA	(Kg ^m ² x 10 ⁻⁷)	1550
THEORETICAL ACCELERATION	(rad x sec. ⁻²)	32900
BACK E.M.F.	(V/Krpm)	46
MASS	(Kg)	3,9
PROTECTION DEGREE		IP55
LEADS CODE		VI

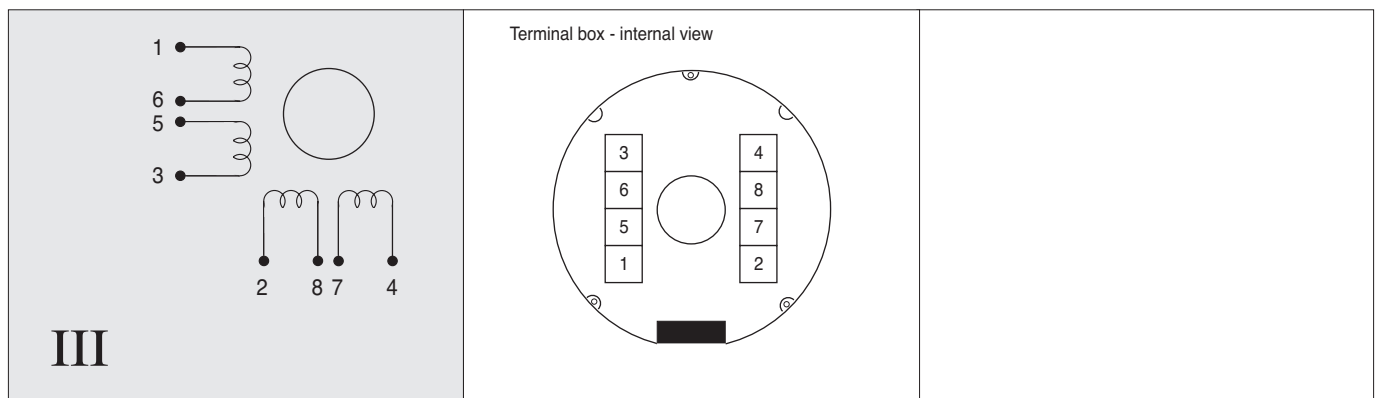




CHARACTERISTICS

MODEL	103 - 8932 - 6451 (103 - 8932 - 6421)	103 - 8960 - 6551
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLAR PARALLEL CURRENT (Amp)	12.7	14.1
UNIPOLAR CURRENT (Amp)	9.0	10.0
RESISTANCE (Ohm)	0.28	0.28
INDUCTANCE (mH)	2.4	3.0
BIPOLAR HOLDING TORQUE (Ncm)	1330	2060
UNIPOLAR HOLDING TORQUE (Ncm)	1020	1580
ROTOR INERTIA ($\text{Kg} \cdot \text{m}^2 \times 10^{-7}$)	8000	11500
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	16500	17900
BACK E.M.F. (V/Krpm)	85	120
MASS (Kg)	7	10.5
PROTECTION DEGREE	IP43	IP43
LEADS CODE	III	III

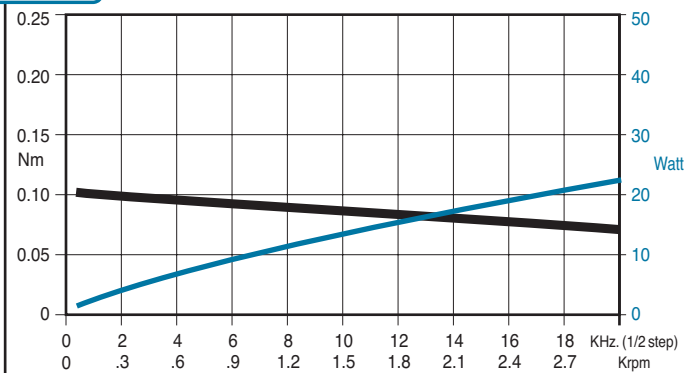
Codes between brackets refer to double shaft model.





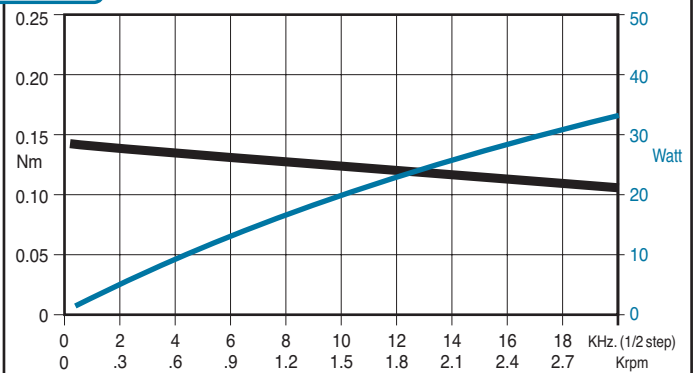
SANYO 103 546 5342 - parallel bipolar connection
RTA HGD04 drive

— torque
— power



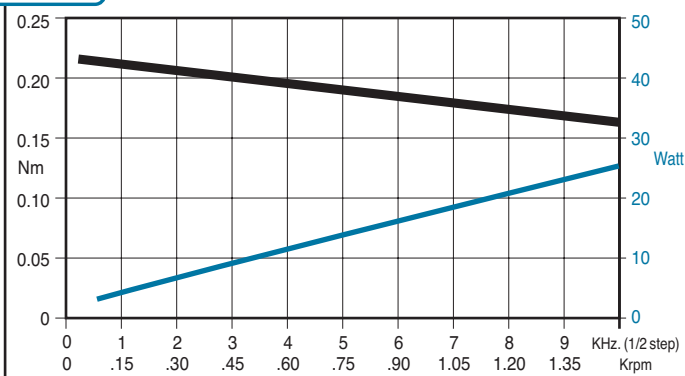
SANYO 103 547 52500 - parallel bipolar connection
RTA HGD04 drive

— torque
— power



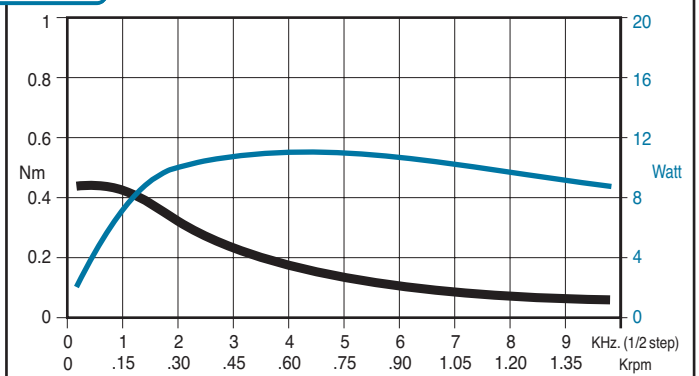
SANYO 103 547 52500 - series bipolar connection
RTA HGD04 drive

— torque
— power



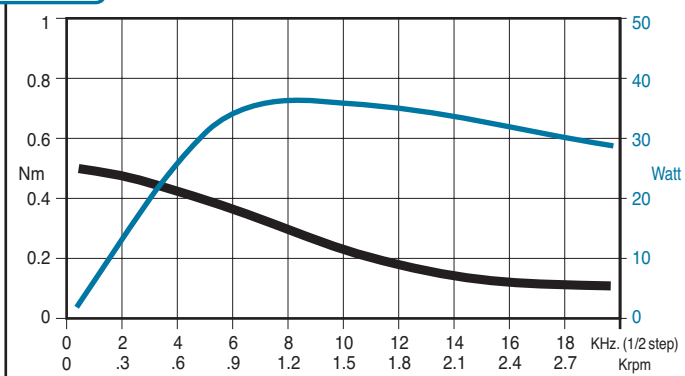
SANYO 103 770 6
24 Volt, 1 Amp. unipolar connection

— torque
— power



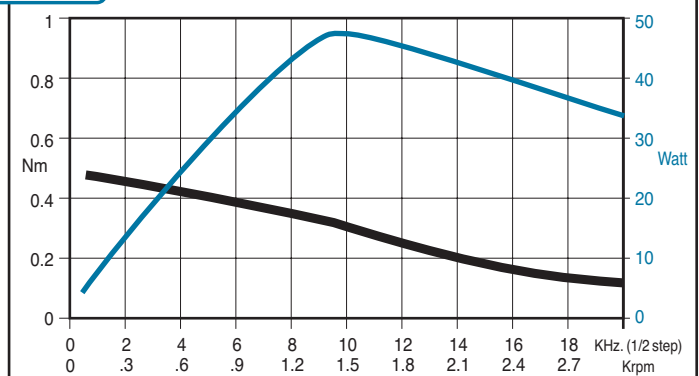
SANYO 103 770 1640 - parallel bipolar connection
RTA GMD02 drive

— torque
— power



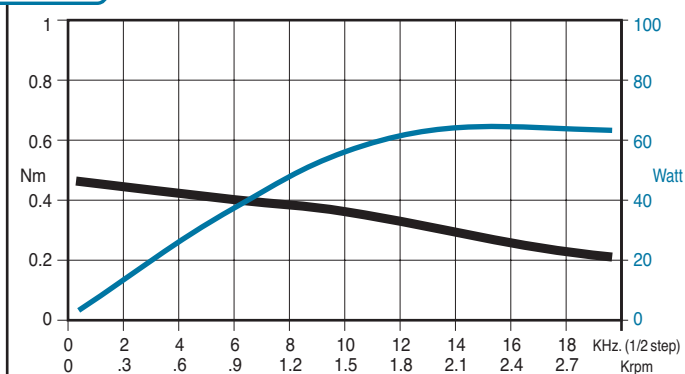
SANYO 103 G770 2241 - series bipolar connection
RTA GMD02 drive

— torque
— power



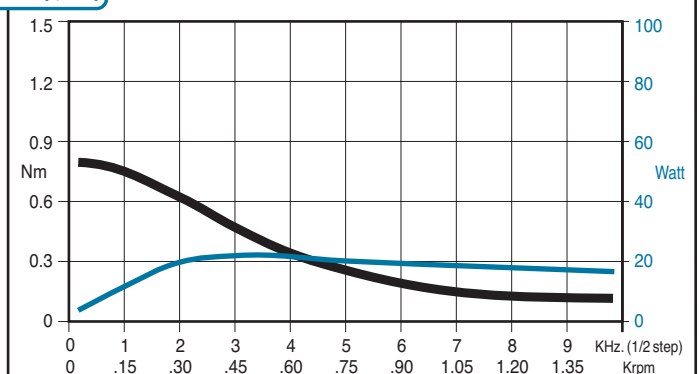
SANYO 103 G770 2241 parallel bipolar connection
RTA GMD02 drive

— torque
— power



SANYO 103 714 0150
24 Volt, 1.8 Amp. unipolar connection

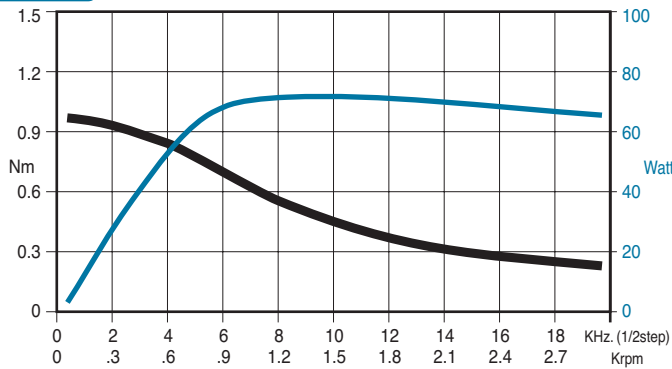
— torque
— power





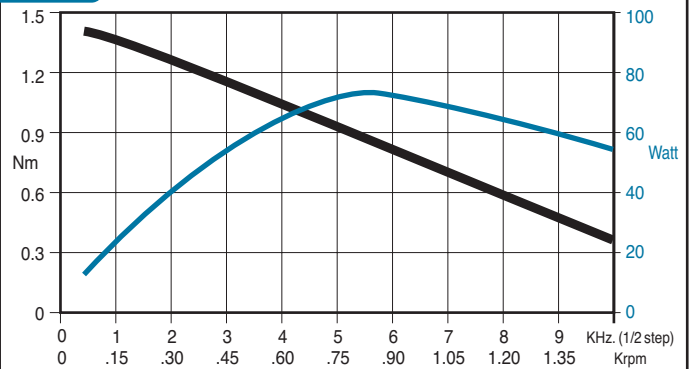
SANYO 103 714 0150 - parallel bipolar connection
RTA GMD02 drive

— torque
— power



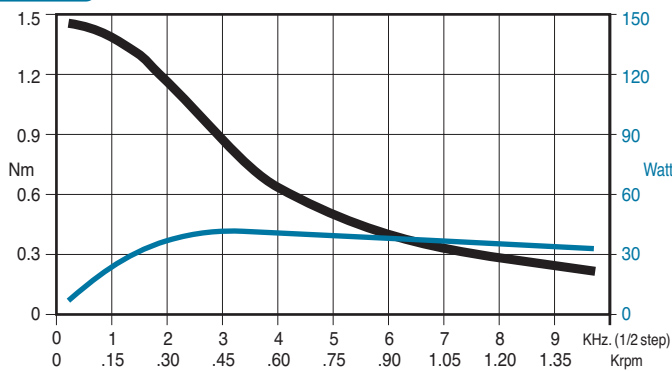
SANYO 103 807 6241 - parallel bipolar connection
RTA GMD02 drive

— torque
— power



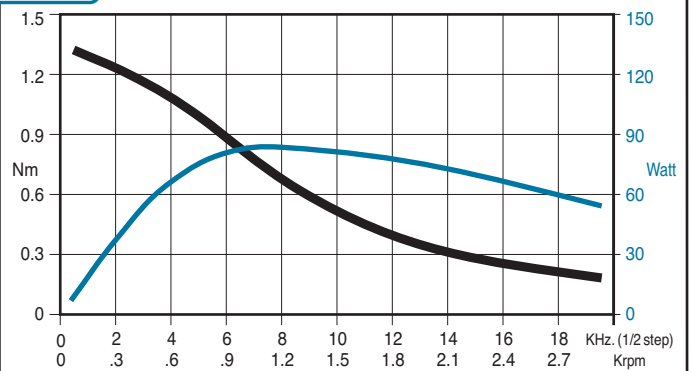
SANYO 103 807 6341 - series bipolar connection
RTA GMD02 drive

— torque
— power



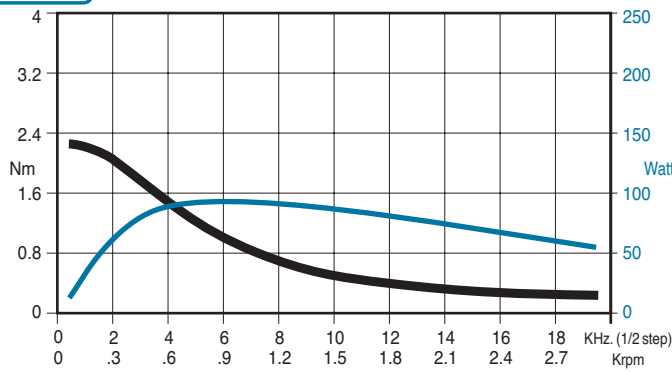
SANYO 103 807 6341 - parallel bipolar connection
RTA GMD02 drive

— torque
— power



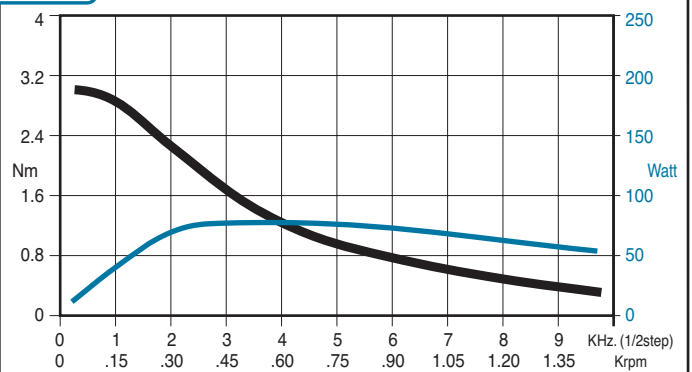
SANYO 103 810 6 - parallel bipolar connection
RTA GMD02 drive

— torque
— power



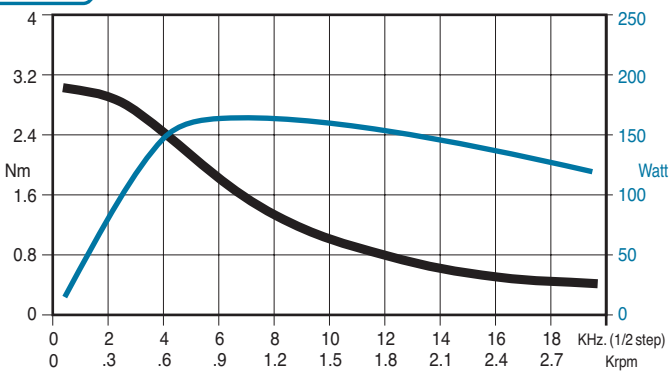
SANYO 103 814 6541 - series bipolar connection
RTA GMD02 drive

— torque
— power



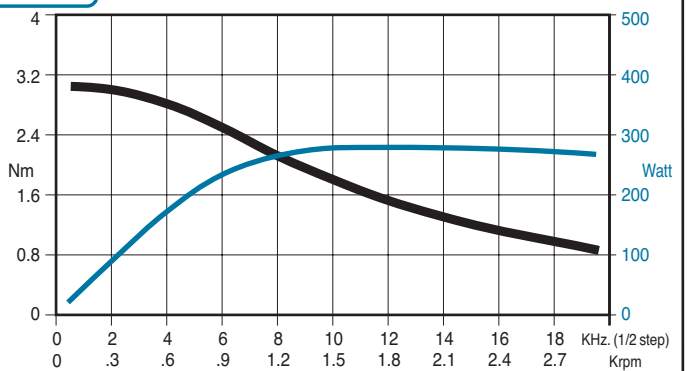
SANYO 103 814 6541 - parallel bipolar connection
RTA GMD03 drive

— torque
— power



SANYO 103 814 6541 - parallel bipolar connection
RTA GMD04 drive

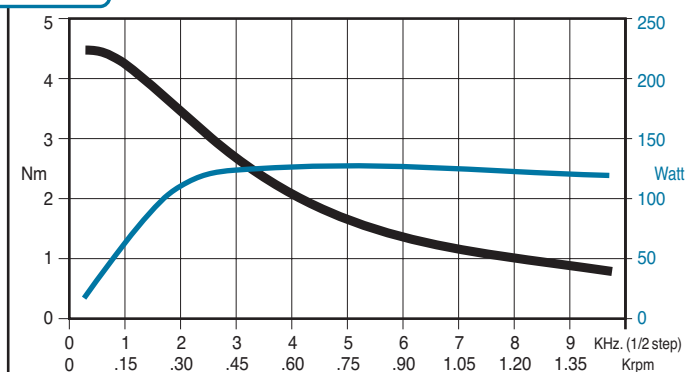
— torque
— power





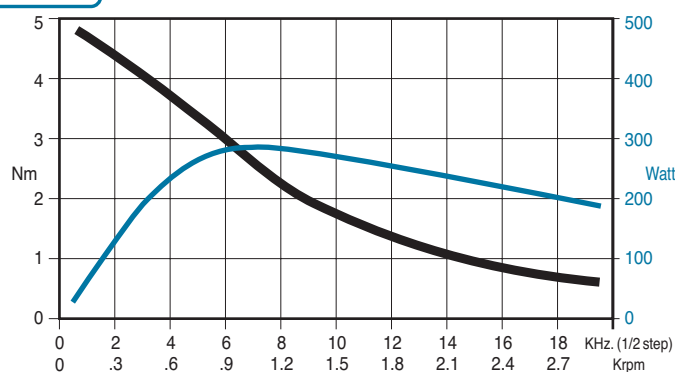
SANYO 103 845 6741 - series bipolar connection
RTA GMD02 drive

— torque
— power



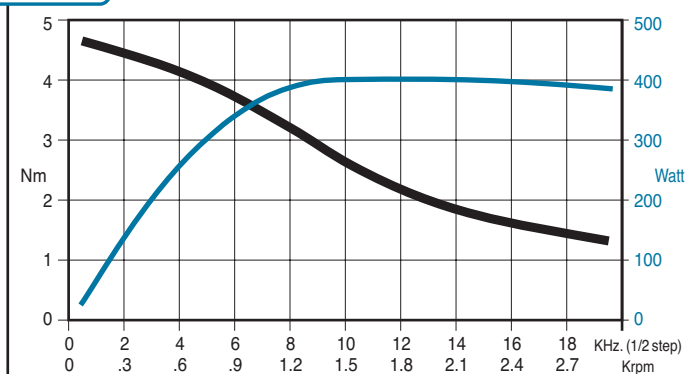
SANYO 103 845 6741 - parallel bipolar connection
RTA GMD03 drive

— torque
— power



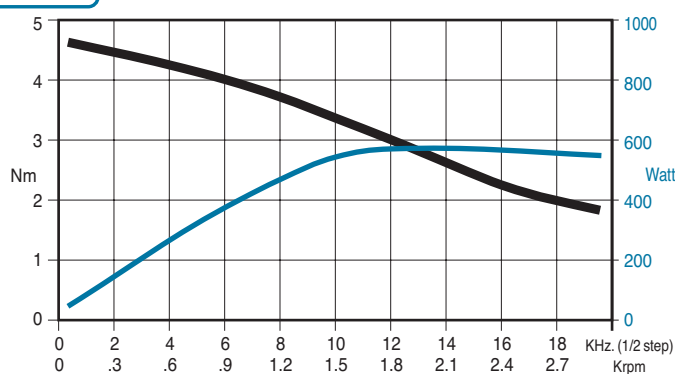
SANYO 103 845 6741 - parallel bipolar connection
RTA GMD04 drive

— torque
— power



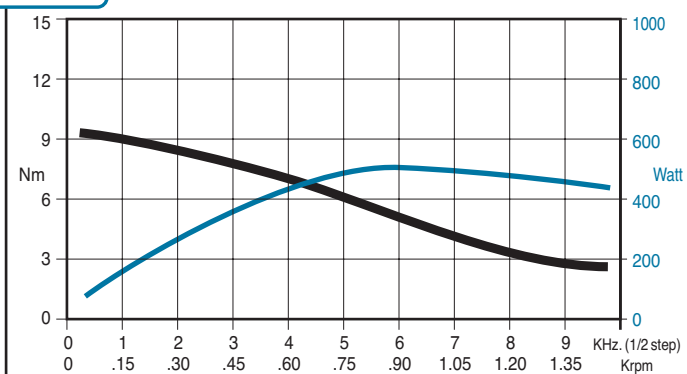
SANYO 103 845 6741 - parallel bipolar connection
RTA GMD06 drive

— torque
— power



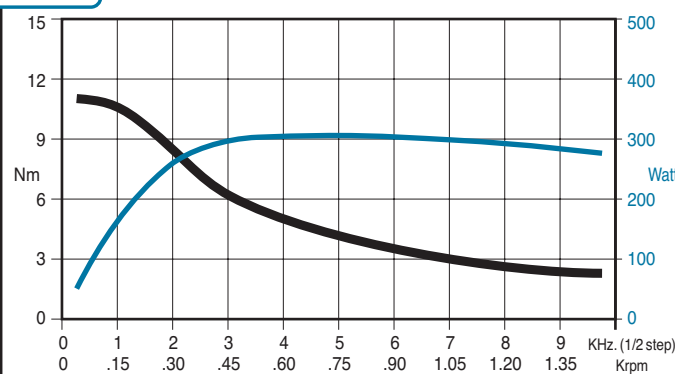
SANYO 103 8932 6451 - parallel bipolar connection
RTA GMD03 drive

— torque
— power



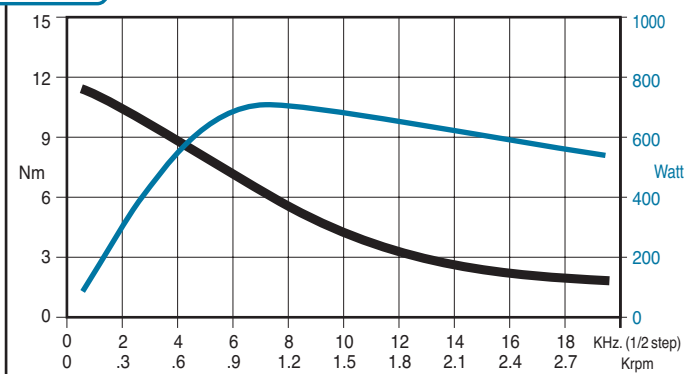
SANYO 103 8932 6451 - series bipolar connection
RTA GMD04 drive

— torque
— power



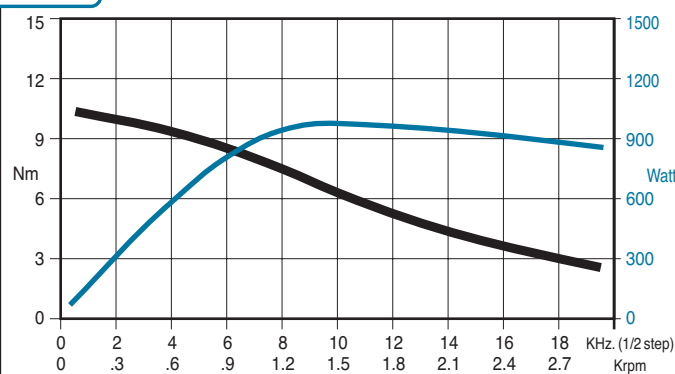
SANYO 103 8932 6451 - parallel bipolar connection
RTA GMD04 drive

— torque
— power



SANYO 103 8932 6451 - parallel bipolar connection
RTA GMD06 drive

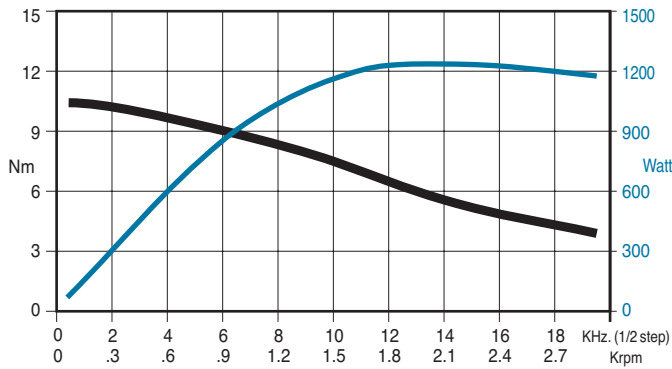
— torque
— power





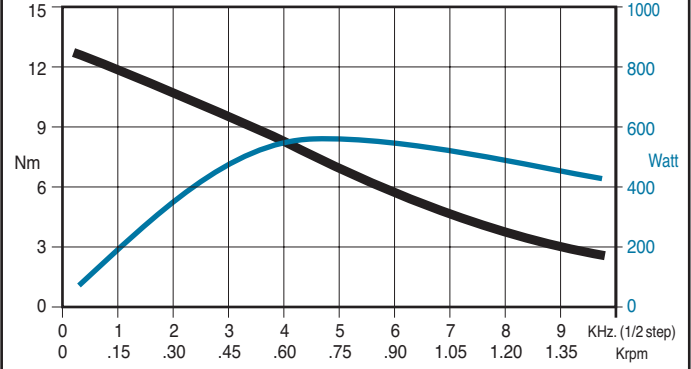
SANYO 103 8932 6451 - parallel bipolar connection
RTA BCW02 drive

— torque
— power



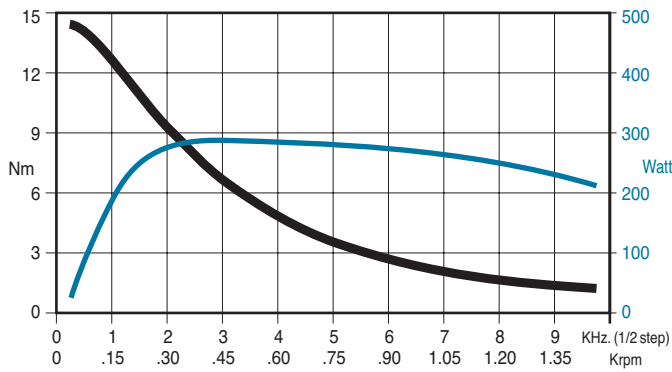
SANYO 103 8960 6551 - parallel bipolar connection
RTA GMD03 drive

— torque
— power



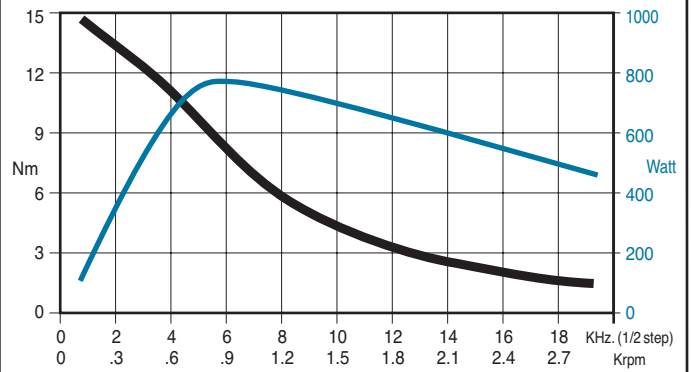
SANYO 103 8960 6551 - series bipolar connection
RTA GMD04 drive

— torque
— power



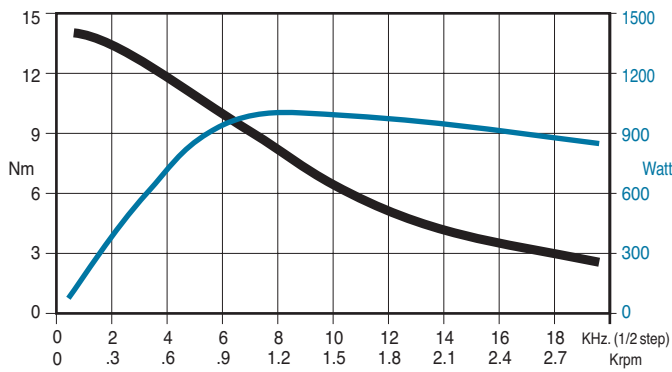
SANYO 103 8960 6551 - parallel bipolar connection
RTA GMD04 drive

— torque
— power



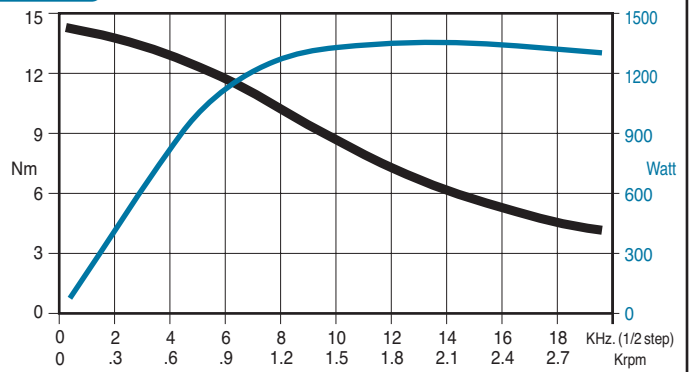
SANYO 103 8960 6551 - parallel bipolar connection
RTA GMD06 drive

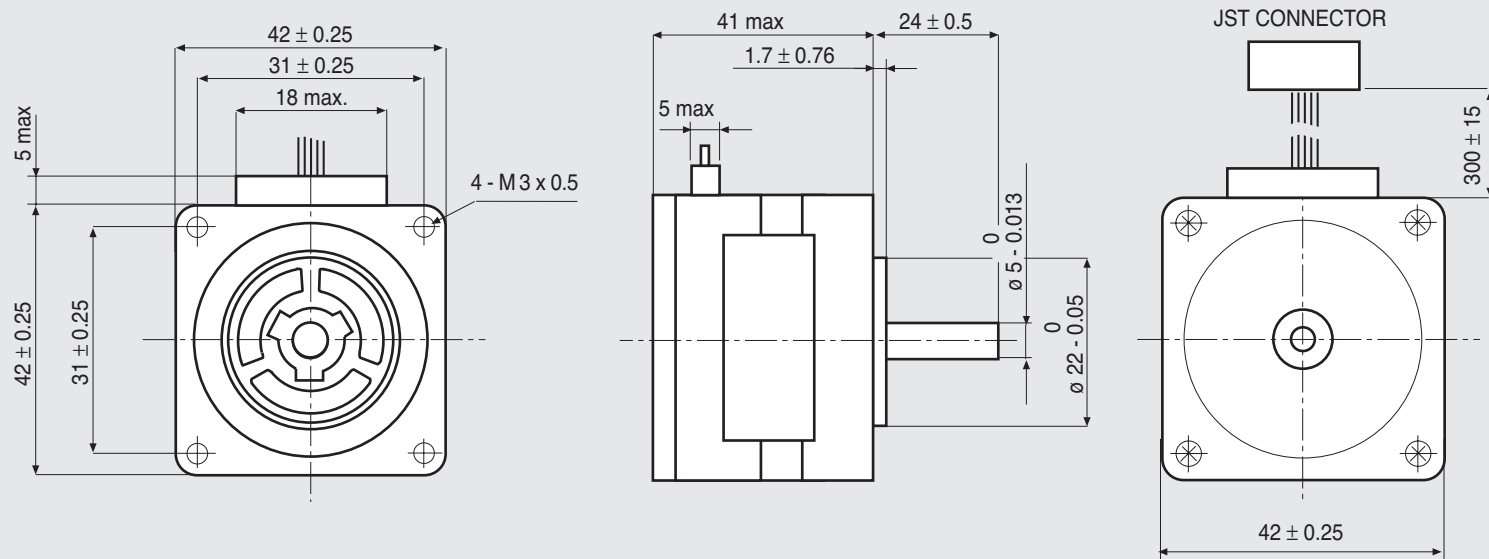
— torque
— power



SANYO 103 8960 6551 - parallel bipolar connection
RTA BCW02 drive

— torque
— power



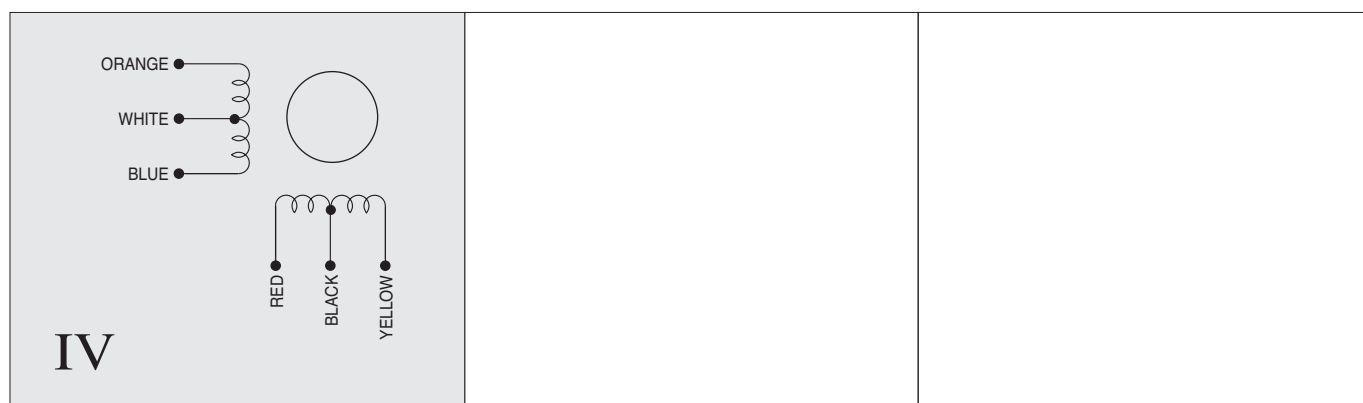


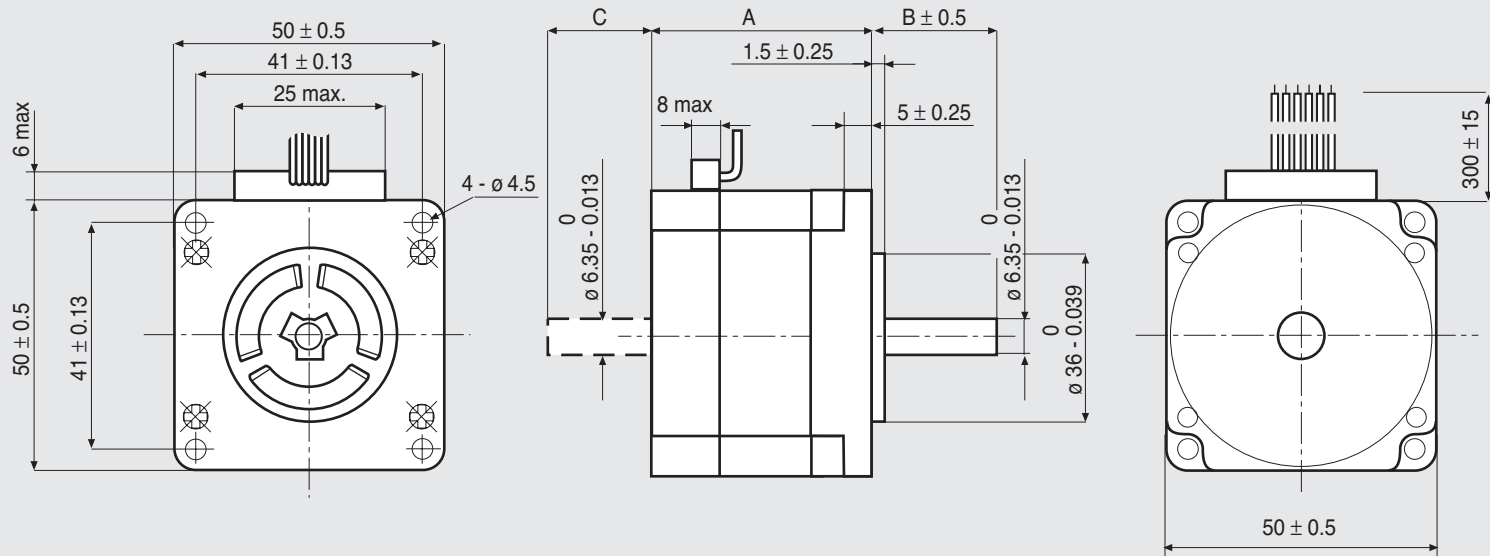
MOTOR CONNECTOR IS JST mod.EHR-6 A 6 POLES FEMALE.
FOR CONNECTION USE JST mod. B6B-EH-A MALE CONNECTOR.

CHARACTERISTICS

MODEL	103 - H548 - 04500
BASIC STEP ANGLE	1.8° ± 0.09°
BIPOlar CURRENT (Amp)	0.9 (*)
UNIPOlar CURRENT (Amp)	1.2
RESISTANCE (Ohm)	3
INDUCTANCE (mH)	4.3
BIPOlar HOLDING TORQUE (Ncm)	37
UNIPOlar HOLDING TORQUE (Ncm)	27
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	53
THEORETICAL ACCELERATION (rad x sec. ⁻²)	66000
BACK E.M.F. (V/Krpm)	17
MASS (Kg)	0.28
LEADS CODE	IV

(*) Series bipolar connection.





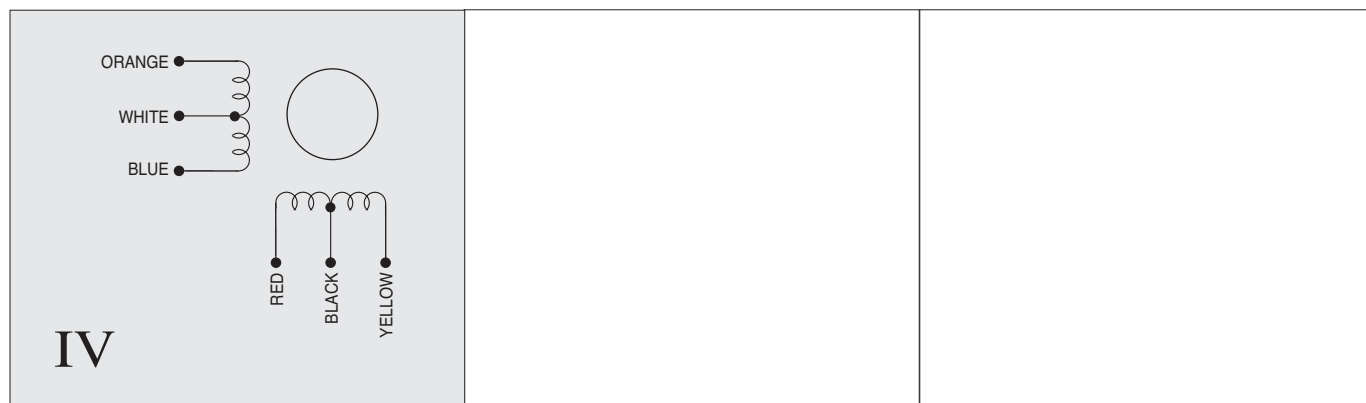
MODEL	A	B	C
103 - H6701 - 0140	39.8	20.6	
103 - H6701 - 0113	39.8	28	15.5
103 - H6703 - 0440	51.3	20.6	

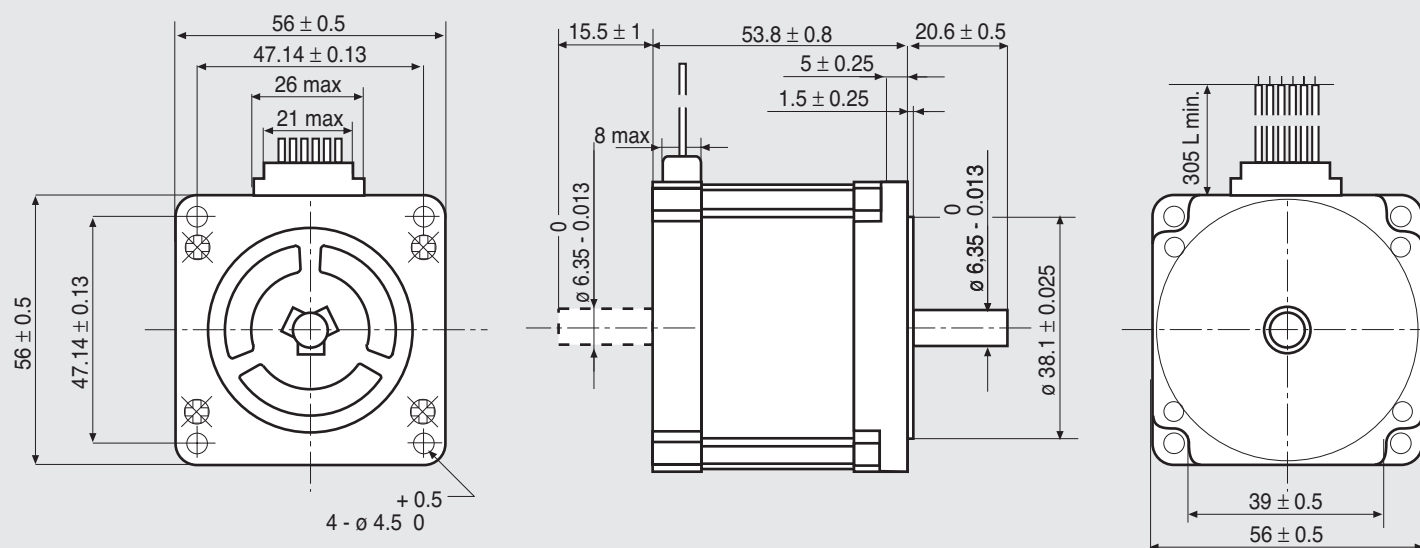
CHARACTERISTICS

MODEL	103 - H6701 - 0140 (103 - H6701 - 0113)	103 - H6703 - 0440
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	0.7 ^(*)	1.4 ^(*)
UNIPOLAR CURRENT (Amp)	1.0	2.0
RESISTANCE (Ohm)	4.3	1.6
INDUCTANCE (mH)	6.8	3.2
BIPOLAR HOLDING TORQUE (Ncm)	38	68
UNIPOLAR HOLDING TORQUE (Ncm)	28	49
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	57	118
THEORETICAL ACCELERATION (rad x sec. ⁻²)	66000	58000
BACK E.M.F. (V/Krpm)	20	17.5
MASS (Kg)	0.35	0.5
LEADS CODE	IV	IV

Codes between brackets refer to double shaft model.

^(*) Series bipolar connection.



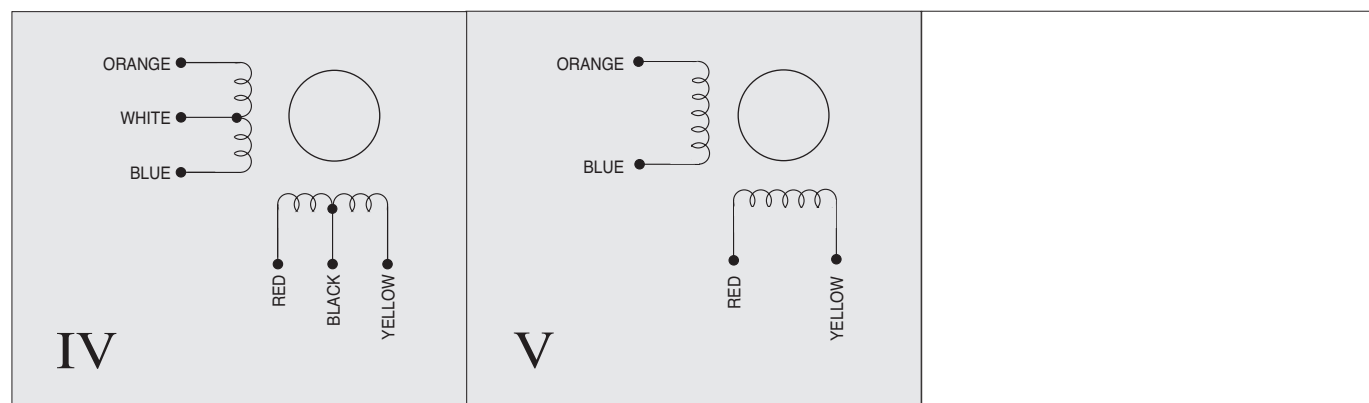


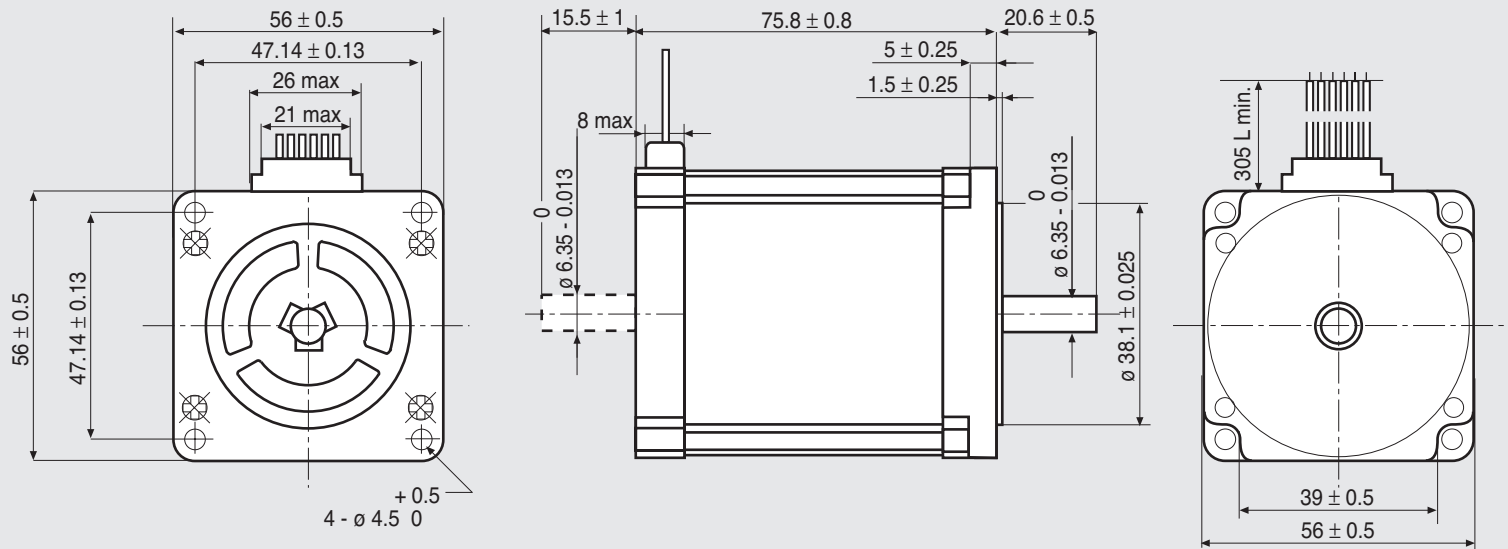
CHARACTERISTICS

MODEL	103-H7123-0140	103-H7123-0440	103-H7123-0740 (103-H7123-0710)	103-H7123-1740 (103-H7123-1710)
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	0.7 (*)	1.5 (*)	2.2 (*)	4
UNIPOLAR CURRENT (Amp)	1	2	3	
RESISTANCE (Ohm)	6.7	1.6	0.77	0,41
INDUCTANCE (mH)	15	3.8	1.6	1,6
BIPOLAR HOLDING TORQUE (Ncm)	110	110	110	110
UNIPOLAR HOLDING TORQUE (Ncm)	85	85	85	
ROTOR INERTIA ($\text{Kg} \cdot \text{m}^2 \times 10^{-7}$)	210	210	210	210
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	50000	50000	50000	50000
BACK E.M.F. (V/Krpm)	60	31	20	20
MASS (Kg)	0.65	0.65	0.65	0,65
LEADS CODE	IV	IV	IV	V

Codes between brackets refer to double shaft model.

(*) Series bipolar connection.



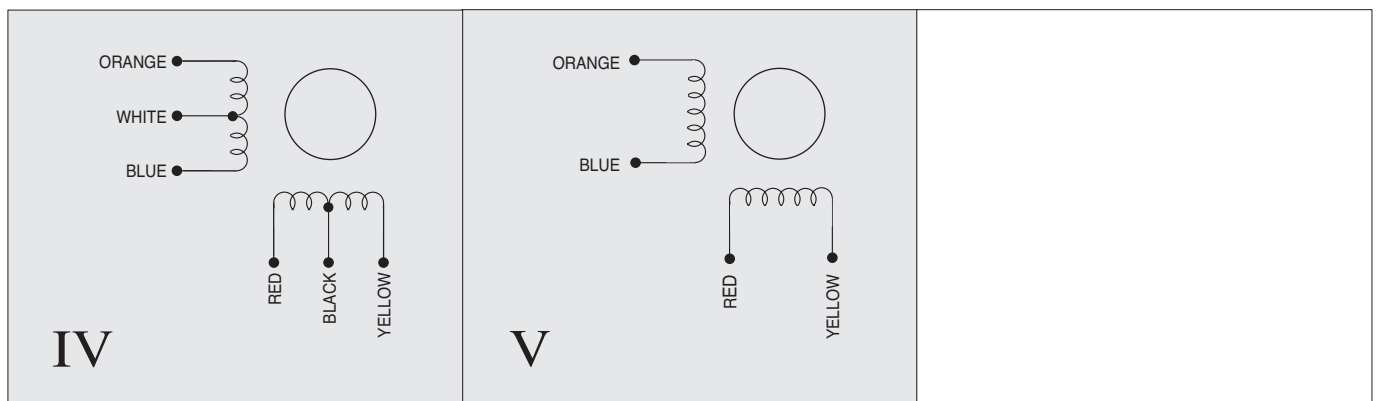


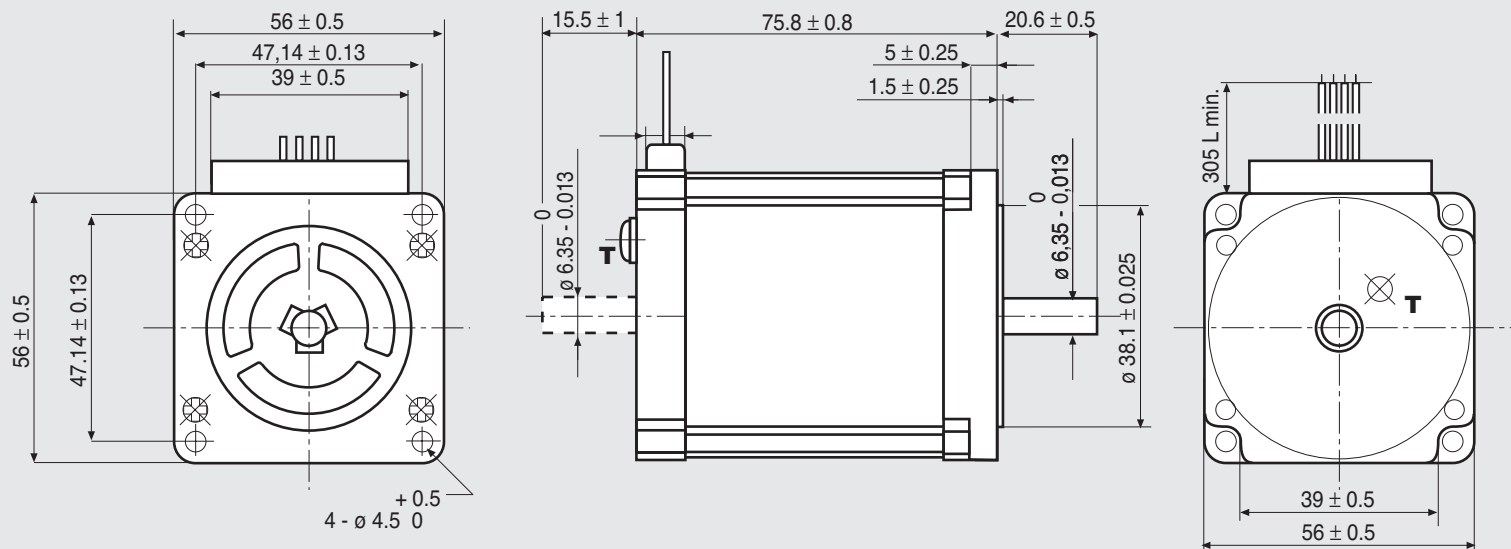
CHARACTERISTICS

MODEL	103 - H7126 - 0140	103 - H7126 - 0740 (103 - H7126 - 0710)	103 - H7126 - 1740 (103 - H7126 - 1712)
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$	$1.8^\circ \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	0.75 (*)	2.2 (*)	4
UNIPOLAR CURRENT (Amp)	1	3	
RESISTANCE (Ohm)	8.6	0.9	0.48
INDUCTANCE (mH)	19	2.2	2.2
BIPOLAR HOLDING TORQUE (Ncm)	165	165	165
UNIPOLAR HOLDING TORQUE (Ncm)	130	130	
ROTOR INERTIA ($\text{Kg} \cdot \text{m}^2 \times 10^{-7}$)	360	360	360
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	45800	45800	45800
BACK E.M.F. (V/Krpm)	92	31	31
MASS (Kg)	1	1	1
LEADS CODE	IV	IV	V

Codes between brackets refer to double shaft model.

(*) Series bipolar connection.



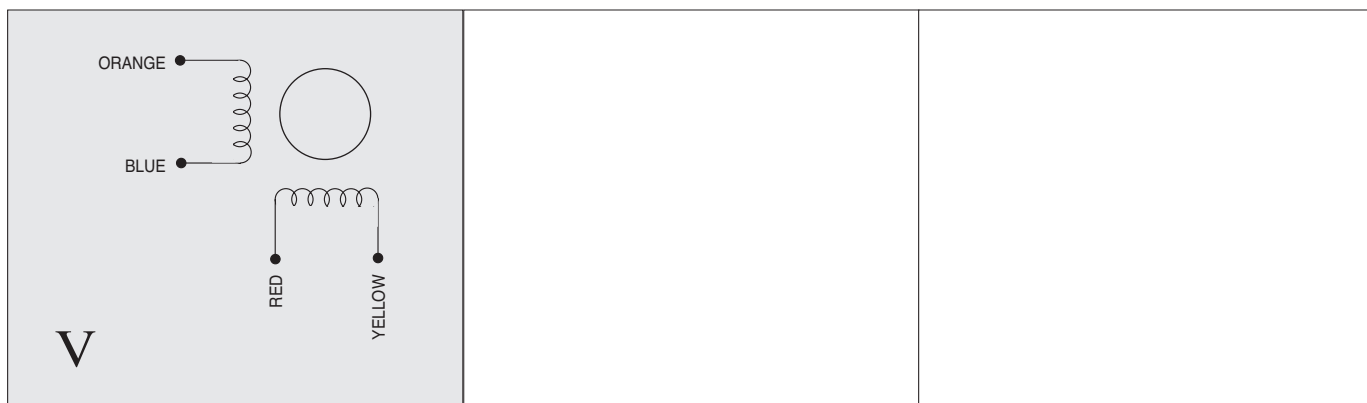


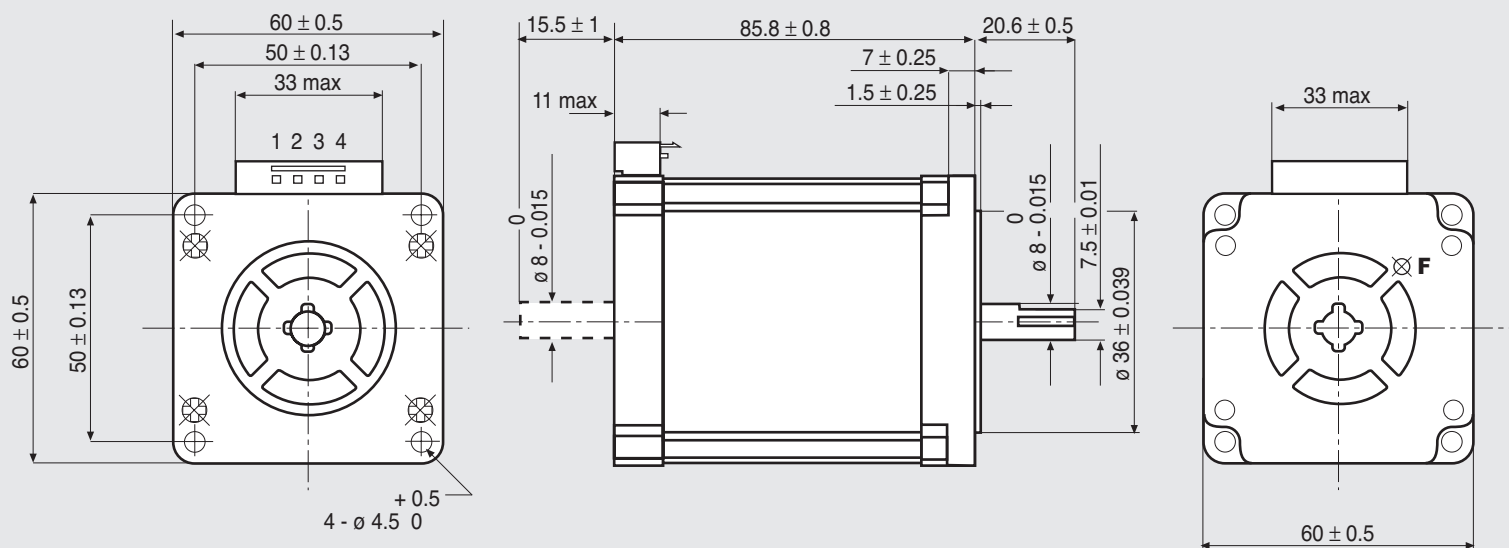
T IS THE EARTH TERMINAL.

CHARACTERISTICS

MODEL	103 - H7126 - 6640 (103 - H7126 - 6610)
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	5.6
RESISTANCE (Ohm)	0.3
INDUCTANCE (mH)	0.85
BIPOLAR HOLDING TORQUE (Ncm)	165
ROTOR INERTIA ($\text{Kg} \cdot \text{m}^2 \times 10^{-7}$)	360
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	45800
BACK E.M.F. (V/Krpm)	23
MASS (Kg)	1
PROTECTION DEGREE	IP43
LEADS CODE	V

Codes between brackets refer to double shaft model.





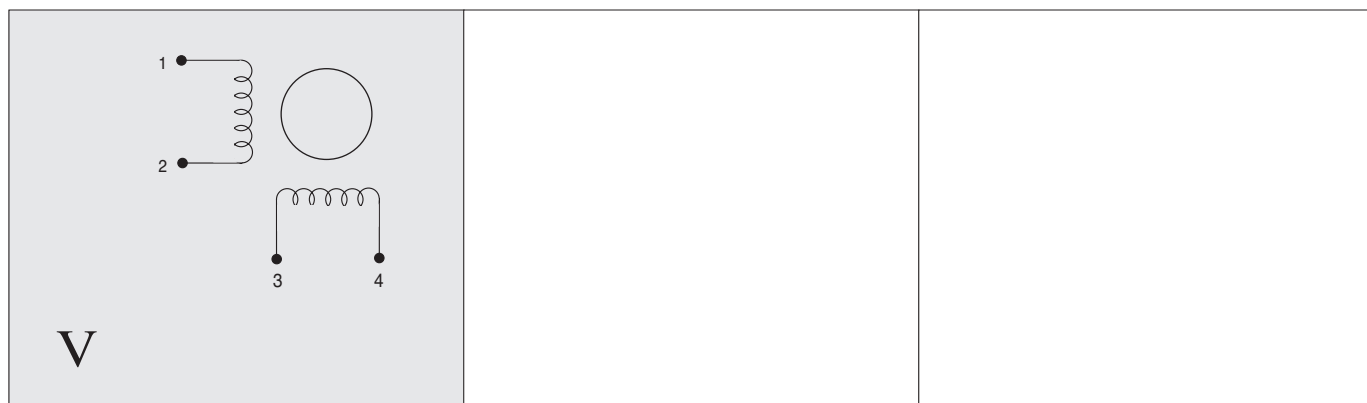
MOTOR CONNECTOR IS JST mod. B4P-VH 4 POLES MALE.
FOR CONNECTION USE JST mod. VHR-4N FEMALE CONNECTOR AND mod. SVH-21T-P1.1 CONTACTS.

FOR **F** THREADED HOLE USE 3x6 mm SCREWS.

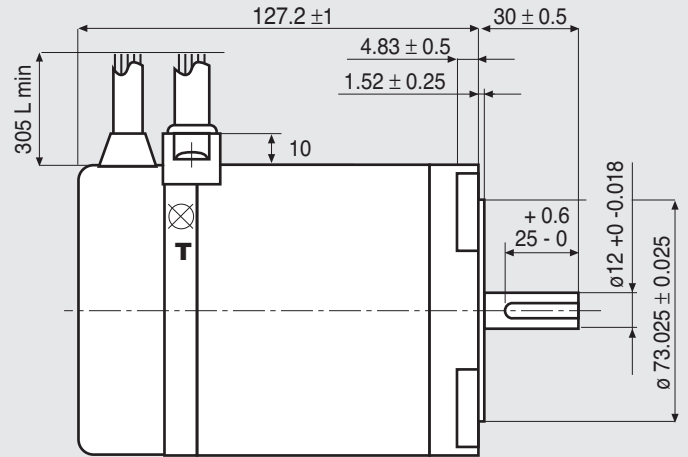
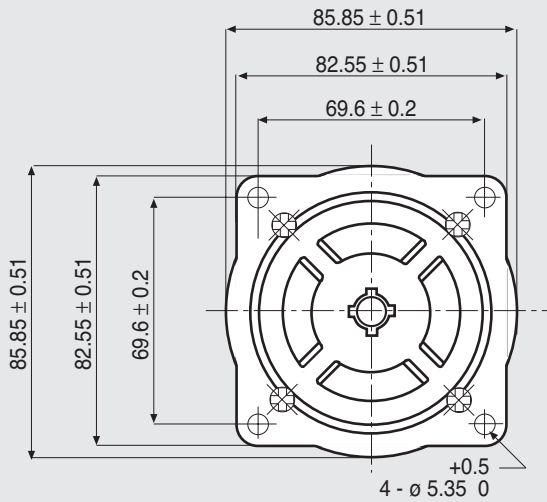
CHARACTERISTICS

MODEL	103 - H7823 - 1741 (103 - H7823 - 1711)
BASIC STEP ANGLE	$1.8^\circ \pm 0.09^\circ$
BIPOLAR CURRENT (Amp)	4.0
RESISTANCE (Ohm)	0.65
INDUCTANCE (mH)	2.4
BIPOLAR HOLDING TORQUE (Ncm)	300
ROTOR INERTIA ($\text{Kgm}^2 \times 10^{-7}$)	840
THEORETICAL ACCELERATION ($\text{rad} \times \text{sec}^{-2}$)	35700
BACK E.M.F. (V/Krpm)	75
MASS (Kg)	1.4
LEADS CODE	V

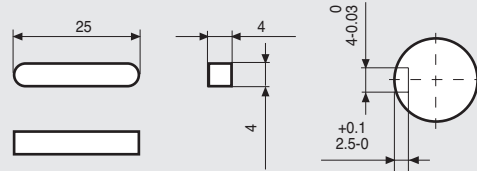
Codes between brackets refer to double shaft model.



SANYO DENKI *Step-Syn* 103 - H8222 - 63XE42 SERIES



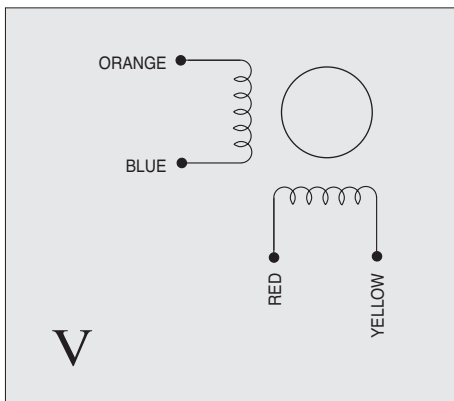
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL



CHARACTERISTICS

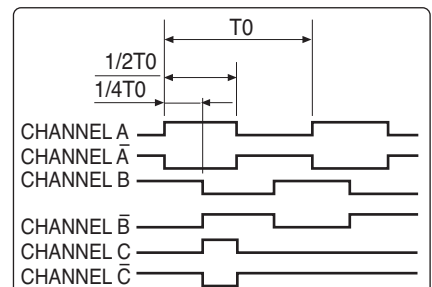
MODEL	103 - H8222 - 63XE42
BASIC STEP ANGLE	1.8° ± 0.09°
BIPOLEAR CURRENT (Amp)	6
RESISTANCE (Ohm)	0.35
INDUCTANCE (mH)	2.7
BIPOLEAR HOLDING TORQUE (Ncm)	560
ROTOR INERTIA (Kg ^m 2 x 10 ⁻⁷)	2900
THEORETICAL ACCELERATION (rad x sec. ⁻²)	19300
BACK E.M.F. (V/Krpm)	93
MASS (Kg)	2.8
PROTECTION DEGREE	IP40
ENCODER CHARACTERISTICS	Line Driver 5 Vdc 200 step/rev.
LEADS CODE	V

Codes between brackets refer to double shaft model.

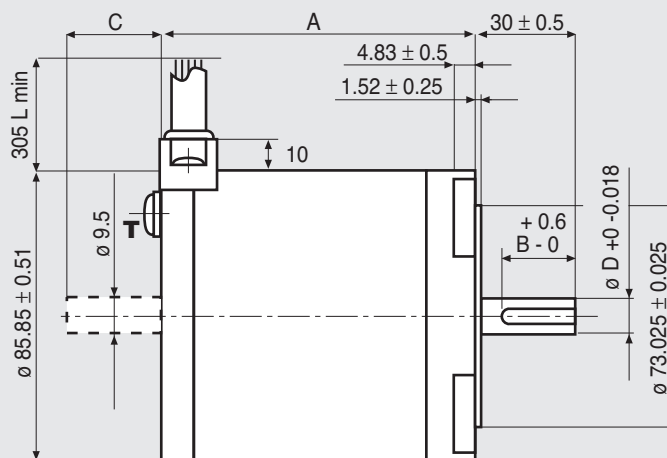
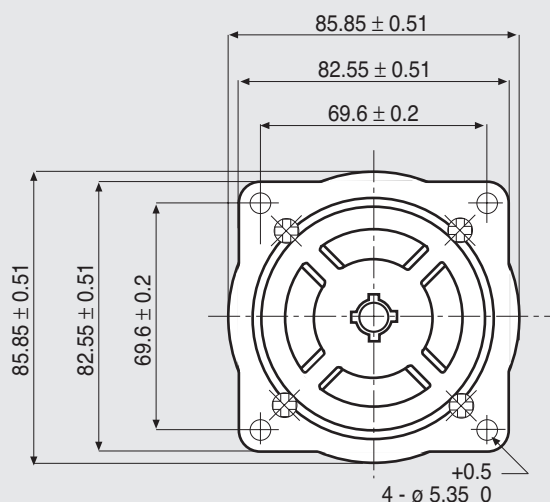


LEADS COLOR	ENCODER
BLUE	CHANNEL A
BROWN	CHANNEL Ā
GREEN	CHANNEL B
PURPLE	CHANNEL B̄
WHITE	CHANNEL C
YELLOW	CHANNEL C̄
RED	±5Volt
BLACK	0Volt
BLACK	FG (SHIELD)

ENCODER OUTPUT WAVEFORM



With this waveform the shaft rotation is counterclockwise when view from mounting surface side. F max 100 KHz.



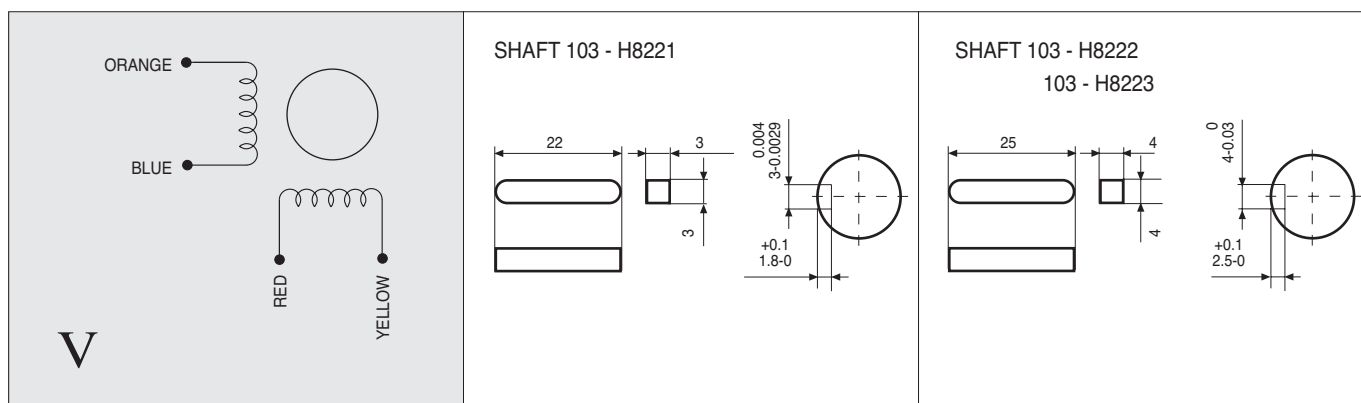
WIRES ARE HOUSED IN A VINYL TUBE.
T IS THE EARTH TERMINAL

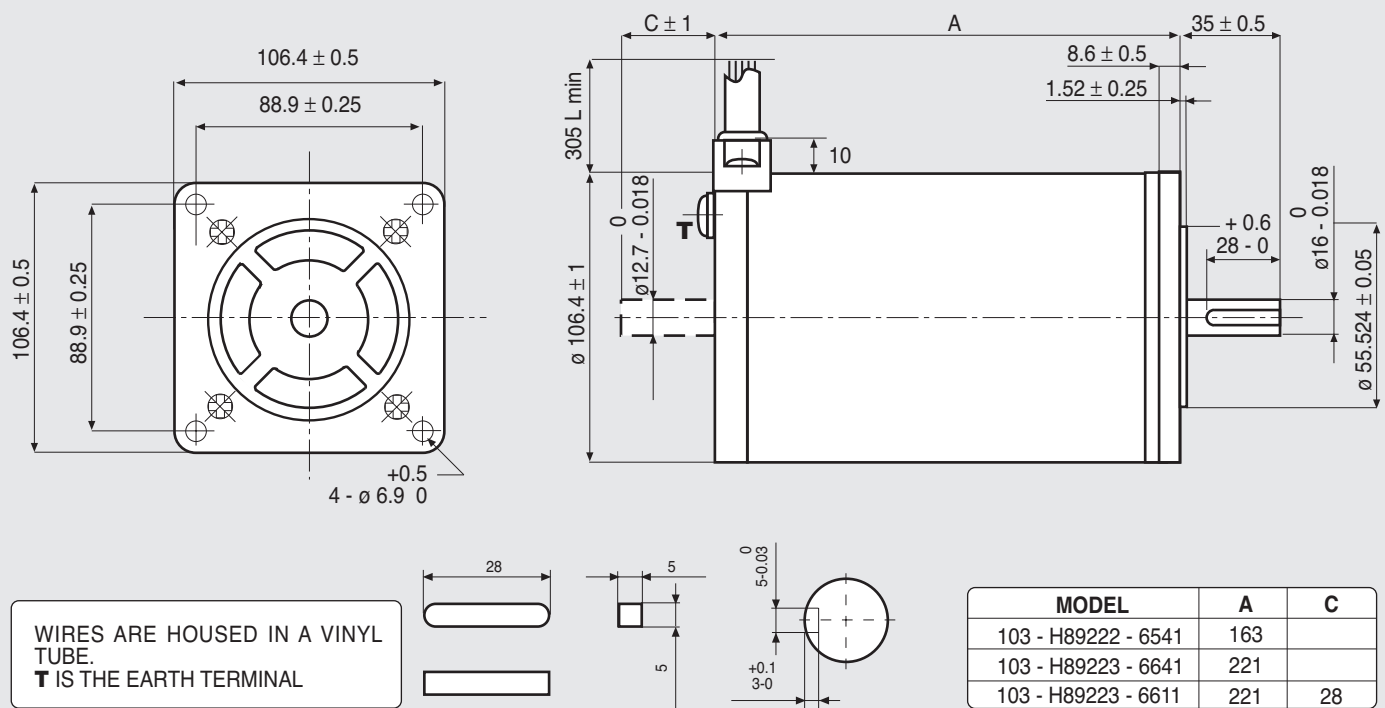
MODEL	A	B	C	D
103 - H8221 - 6241	62	22		9.525
103 - H8221 - 6211	62	22	25.4±0,5	9.525
103 - H8222 - 6340	92.2	25		12
103 - H8222 - 6310	92.2	25	28±1	12
103 - H8223 - 6540	125.9	25		12
103 - H8223 - 6510	125.9	25	28±1	12

CHARACTERISTICS

MODEL	103 - H8221 - 6241 (103 - H8221 - 6211)	103 - H8222 - 6340 (103 - H8222 - 6310)	103 - H8223 - 6540 (103 - H8223 - 6510)
BASIC STEP ANGLE	1,8° ± 0,09°	1,8° ± 0,09°	1,8° ± 0,09°
BIPOLEAR CURRENT (Amp)	6	6	9
RESISTANCE (Ohm)	0.3	0.35	0.2
INDUCTANCE (mH)	1.65	2.7	1.4
BIPOLEAR HOLDING TORQUE (Ncm)	300	560	790
ROTOR INERTIA (Kgm ² x 10 ⁻⁷)	1450	2900	4350
THEORETICAL ACCELERATION (rad x sec. ⁻²)	20600	19300	18200
BACK E.M.F. (V/Krpm)	50	93	88
MASS (Kg)	1.5	2.5	3.5
PROTECTION DEGREE	IP43	IP43	IP43
LEADS CODE	V	V	V

Codes between brackets refer to double shaft model.

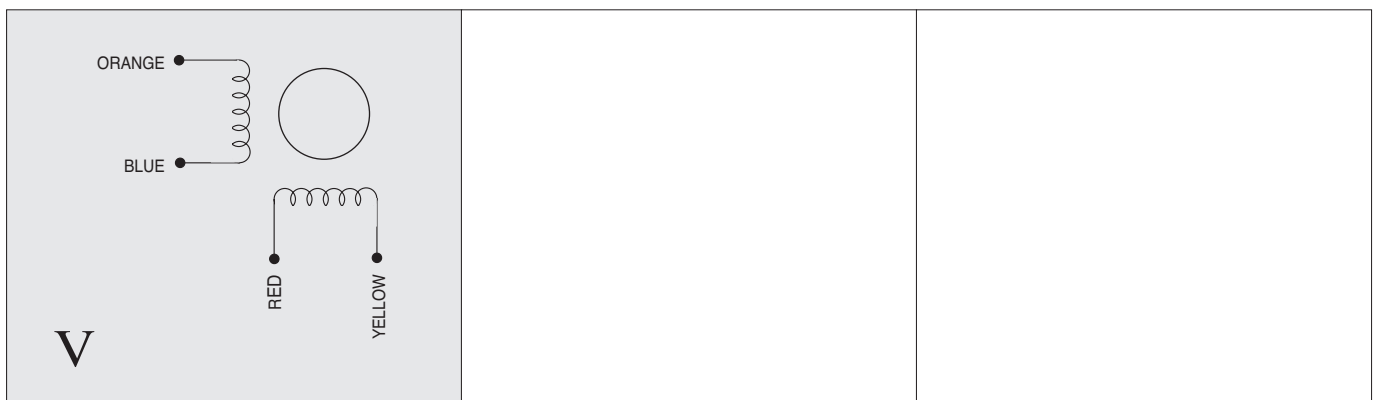




CHARACTERISTICS

MODEL	103 - H89222 - 6541	103 - H89223 - 6641 (103 - H89223 - 6611)
BASIC STEP ANGLE	1.8° ± 0.09°	1.8° ± 0.09°
BIPOLAR CURRENT (Amp)	10	12
RESISTANCE (Ohm)	0.16	0.16
INDUCTANCE (mH)	1.9	2
BIPOLAR HOLDING TORQUE (Ncm)	1620	2460
ROTOR INERTIA (Kg·m ² × 10 ⁻⁷)	14650	22000
THEORETICAL ACCELERATION (rad × sec. ⁻²)	11100	11100
BACK E.M.F. (V/Krpm)	162	205
MASS (Kg)	7	10
PROTECTION DEGREE	IP43	IP43
LEADS CODE	V	V

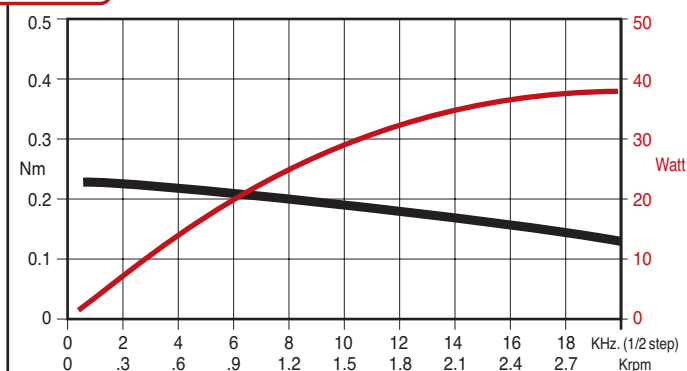
Codes between brackets refer to double shaft model.





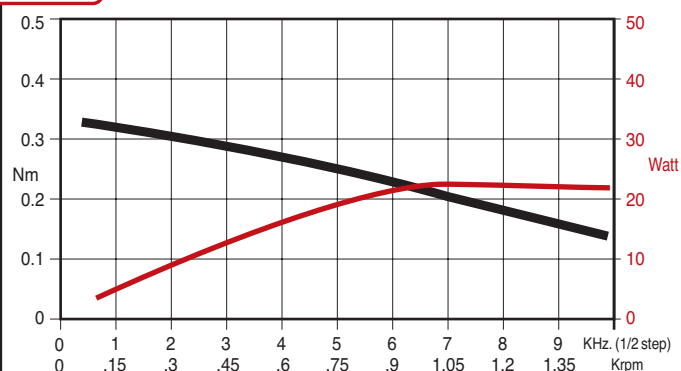
SANYO 103 H548 04500 - parallel bipolar connection - RTA HGD04 drive

— torque
— power



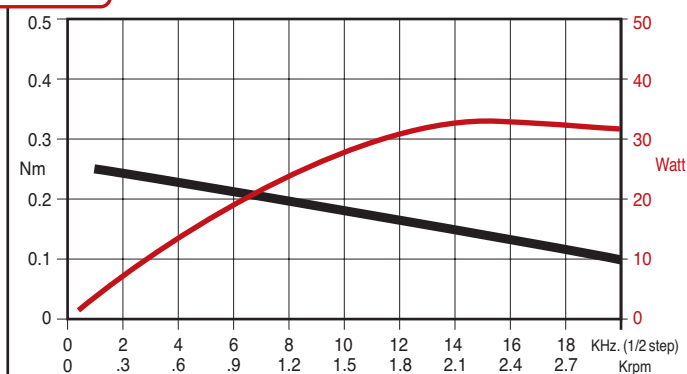
SANYO 103 H548 04500 - series bipolar connection - RTA HGD04 drive

— torque
— power



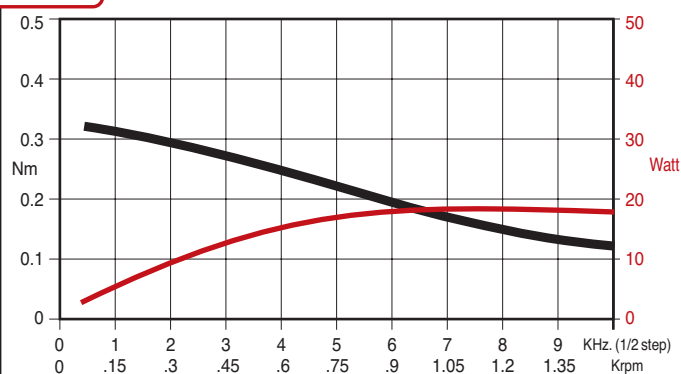
SANYO 103 H6701 0140 - parallel bipolar connection - RTA HGD04 drive

— torque
— power



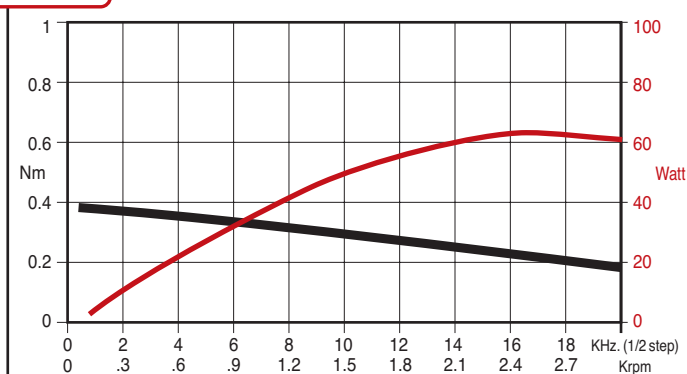
SANYO 103 H6701 0140 - series bipolar connection - RTA HGD04 drive

— torque
— power



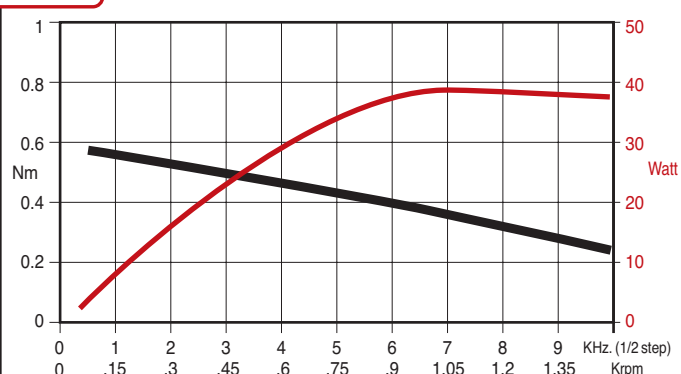
SANYO 103 H6703 0440 - parallel bipolar connection - RTA HGD04 drive

— torque
— power



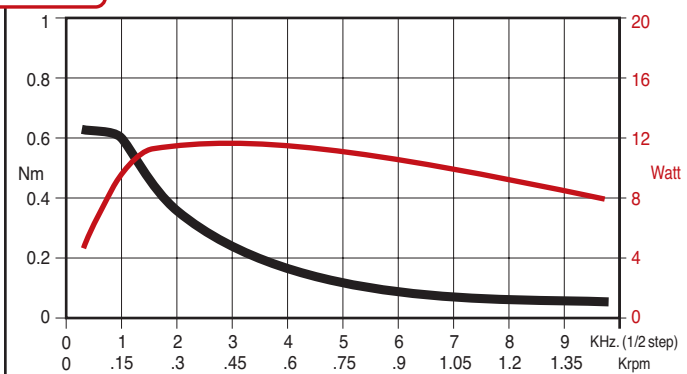
SANYO 103 H6703 0440 - series bipolar connection - RTA HGD04 drive

— torque
— power



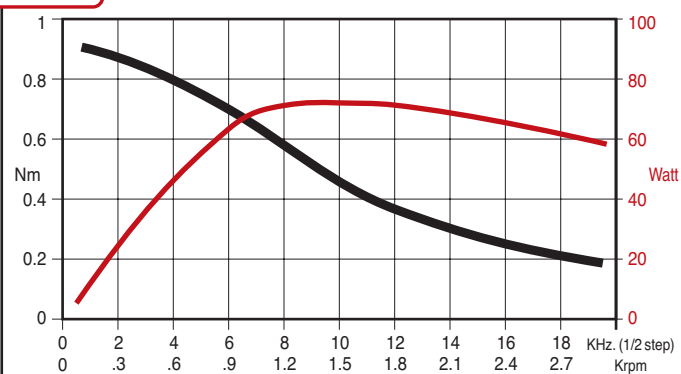
103 H7123 0140
24 Volt, 1 Amp. unipolar connection

— torque
— power



SANYO 103 H7123 0740 - series bipolar connection - RTA GMD02 drive

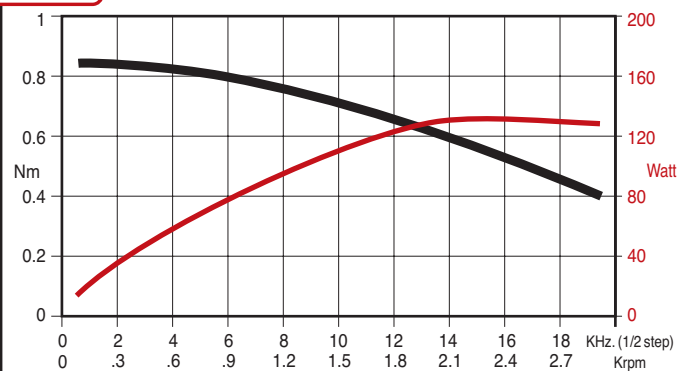
— torque
— power





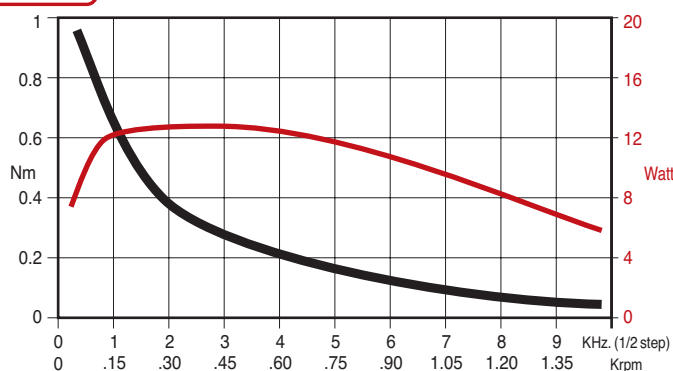
SANYO 103 H7123 1740 - bipolar connection
RTA GMD02 drive

— torque
— power



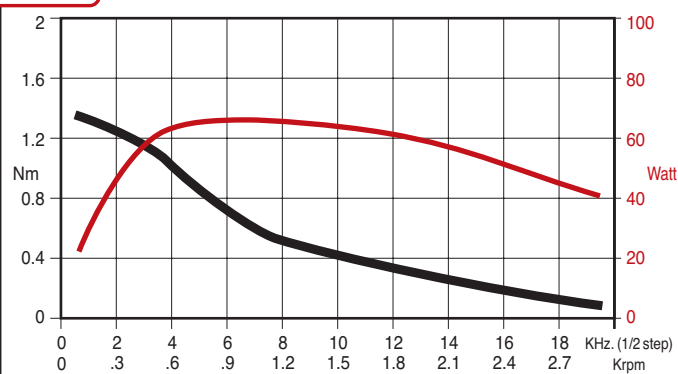
SANYO 103 H7126 0140
24 Volt, 1 Amp. unipolar connection

— torque
— power



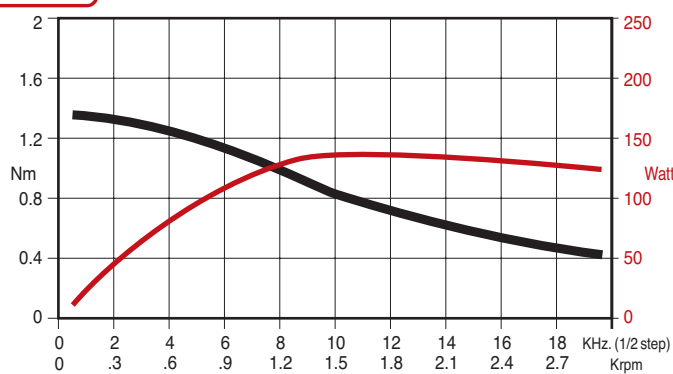
SANYO 103 H7126 0740 - series bipolar connection
RTA GMD02 drive

— torque
— power



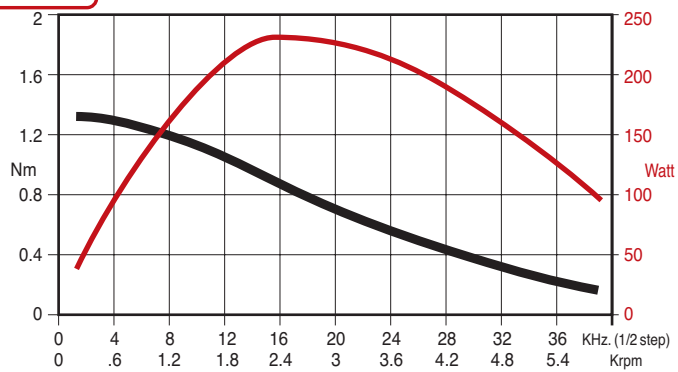
SANYO 103 H7126 1740 - bipolar connection
RTA - GMD02 drive

— torque
— power



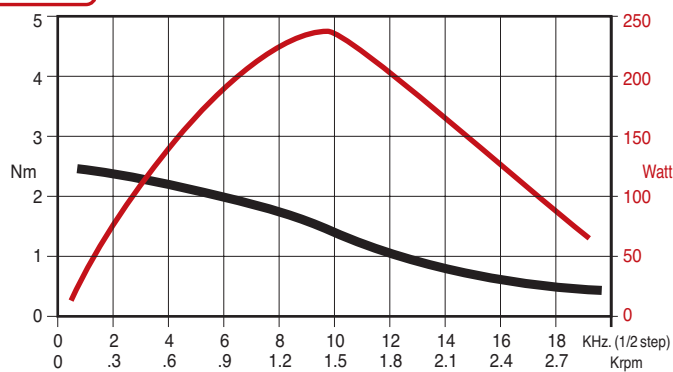
SANYO 103 H7126 6640 - bipolar connection
RTA GMD02 drive

— torque
— power



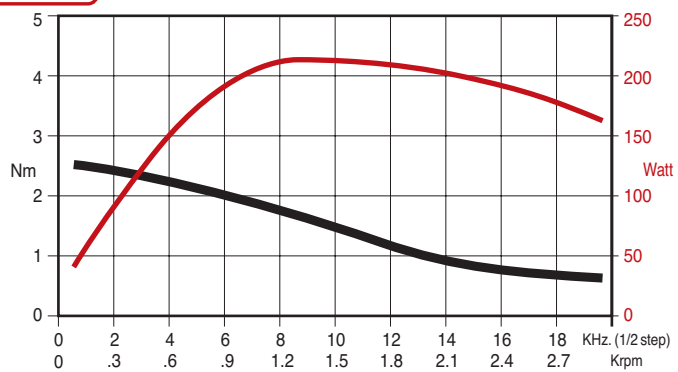
SANYO 103 H7823 1741 - bipolar connection
RTA GMD02 drive

— torque
— power



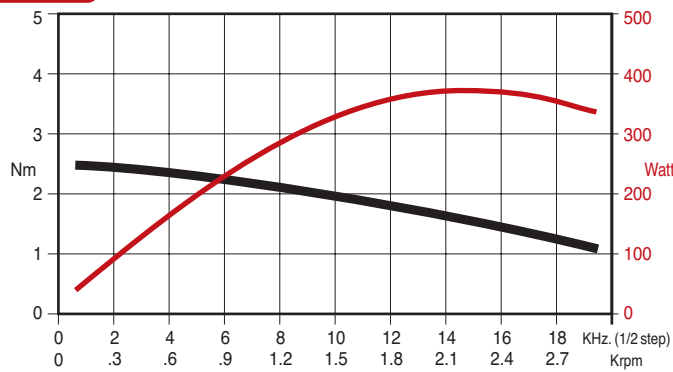
SANYO 103 H8221 6241 - bipolar connection
RTA GMD02 drive

— torque
— power



SANYO 103 H8221 6241 - bipolar connection
RTA GMD04 drive

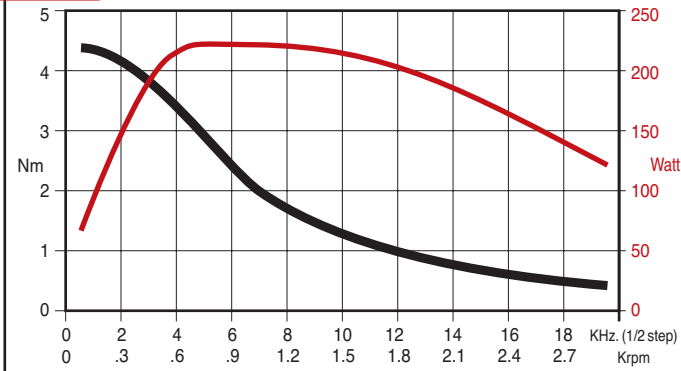
— torque
— power





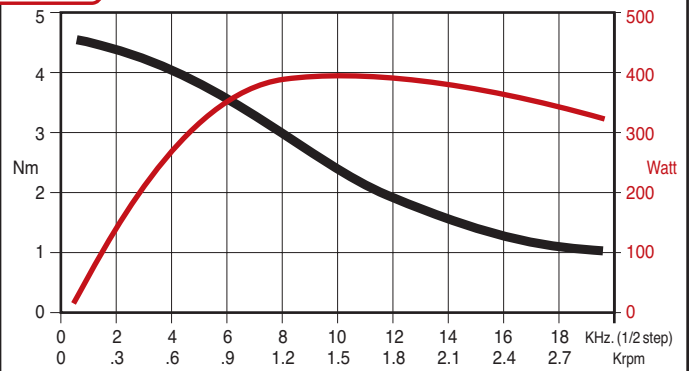
SANYO 103 H8222 6340 - bipolar connection
RTA GMD02 drive

— torque
— power



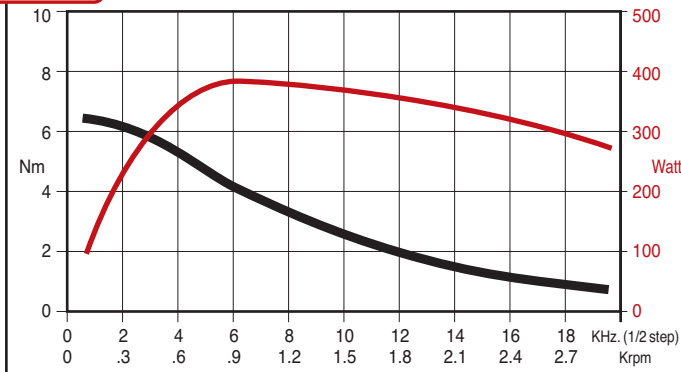
SANYO 103 H8222 6340 - bipolar connection
RTA GMD04 drive

— torque
— power



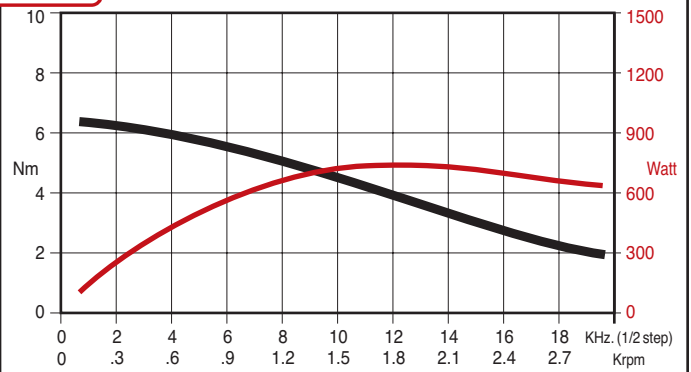
SANYO 103 H8223 6540 - bipolar connection
RTA GMD03 drive

— torque
— power



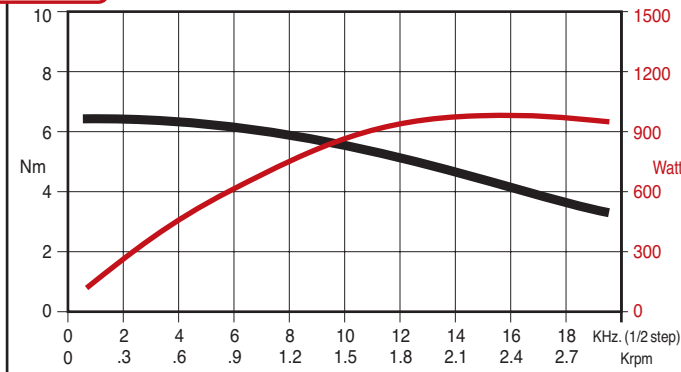
SANYO 103 H8223 6540 - bipolar connection
RTA GMD04 drive

— torque
— power



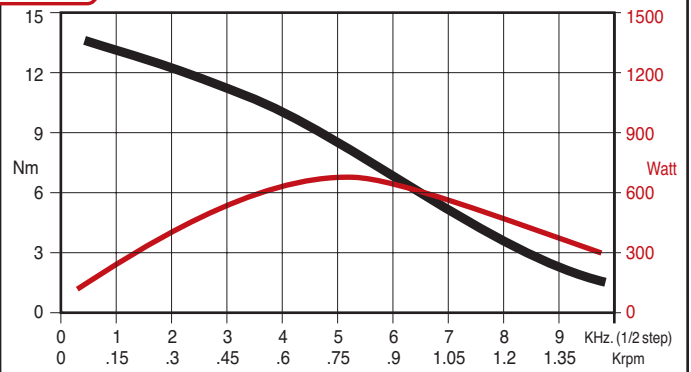
SANYO 103 H8223 6540 - bipolar connection
RTA GMD06 drive

— torque
— power



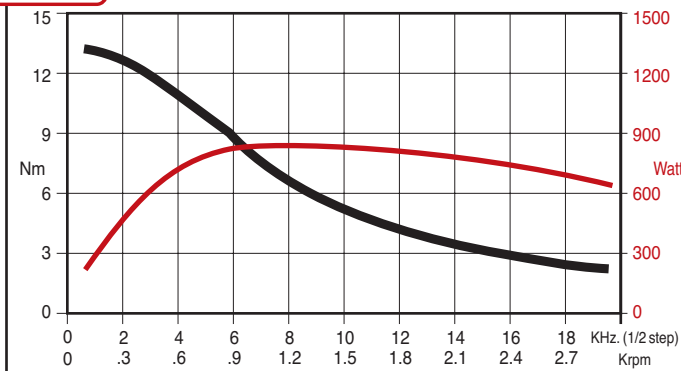
SANYO 103 H89222 6541 - bipolar connection
RTA GMD03 drive

— torque
— power



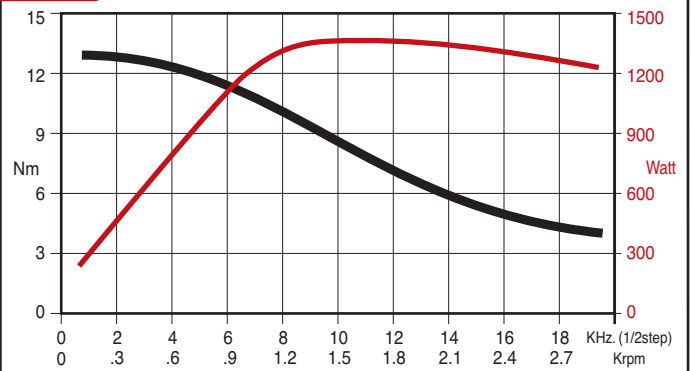
SANYO 103 H89222 6541 - bipolar connection
RTA GMD04 drive

— torque
— power



SANYO 103 H89222 6541 - bipolar connection
RTA GMD06 drive

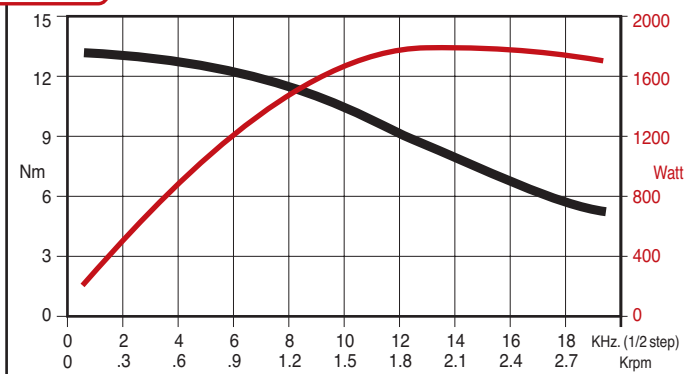
— torque
— power





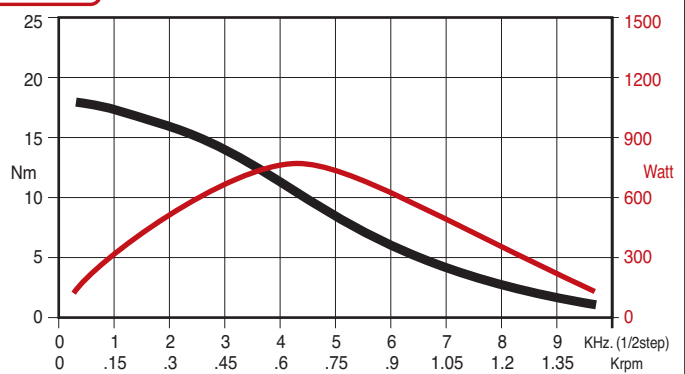
SANYO 103 H89222 6541 - bipolar connection
RTA BCW02 drive

— torque
— power



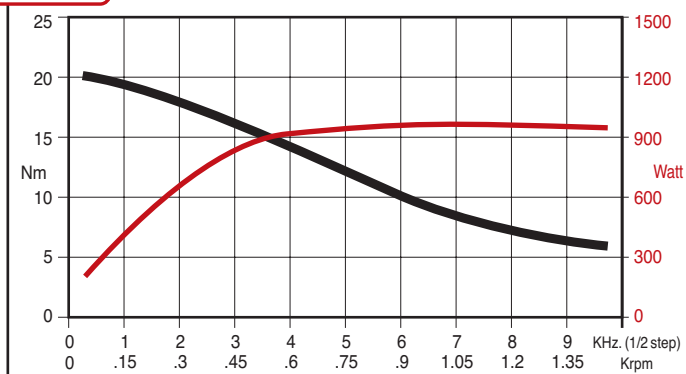
SANYO 103 H89223 6641 - bipolar connection
RTA GMD03 drive

— torque
— power



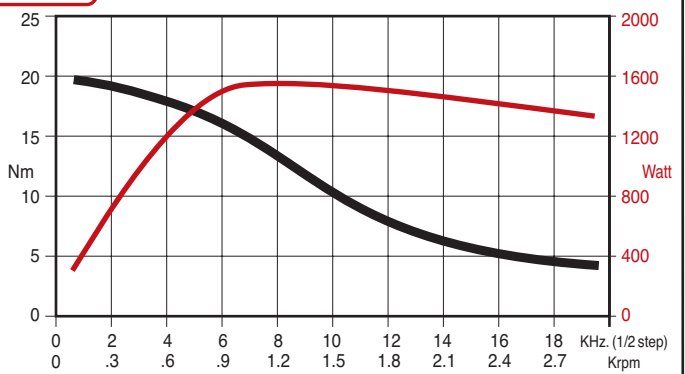
SANYO 103 H89223 6641 - bipolar connection
RTA GMD04 drive

— torque
— power



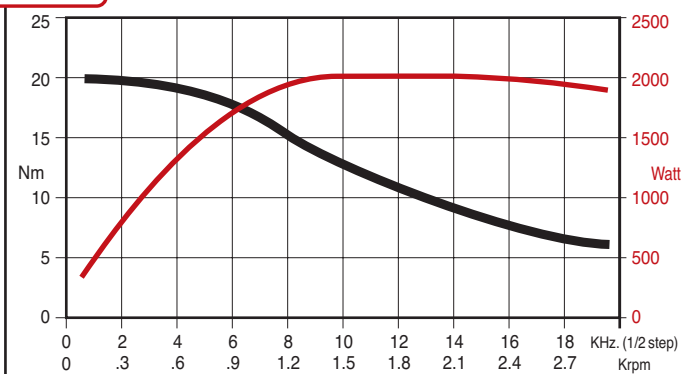
SANYO 103 H89223 6641 - bipolar connection
RTA GMD06 drive

— torque
— power



SANYO 103 H89223 6641 - bipolar connection
RTA BCW02 drive

— torque
— power



CONVERSION FACTORS

LENGTH 1 mm = 3.937×10^{-2} inch

MASS 1 Kg = 2.205 x lb force

INERTIA $10^7 \text{ g cm}^2 = 1 \text{ Kg m}^2 = 5.467 \times 10^4 \text{ oz in}^2 = 3.417 \times 10^3 \text{ lb in}^2$

TORQUE 1 Nm = $1.416 \times 10^2 \text{ oz in} = 0.738 \text{ ft lb} = 8.85 \text{ in lb}$
1 Ncm = $1.416 \text{ oz in} = 7.38 \times 10^{-3} \text{ ft lb} = 8.85 \times 10^{-2} \text{ in lb}$

POWER 1 KW = 1.34 hp
1 W = $1.34 \times 10^{-3} \text{ hp}$

LEADS CODE

PARALLEL BIPOLAR CONNECTION

SERIES BIPOLAR CONNECTION

UNIPOLAR CONNECTION

I			
II			
III			
IV			

LEADS CODE

PARALLEL BIPOLAR CONNECTION

SERIES BIPOLAR CONNECTION

UNIPOLAR CONNECTION

