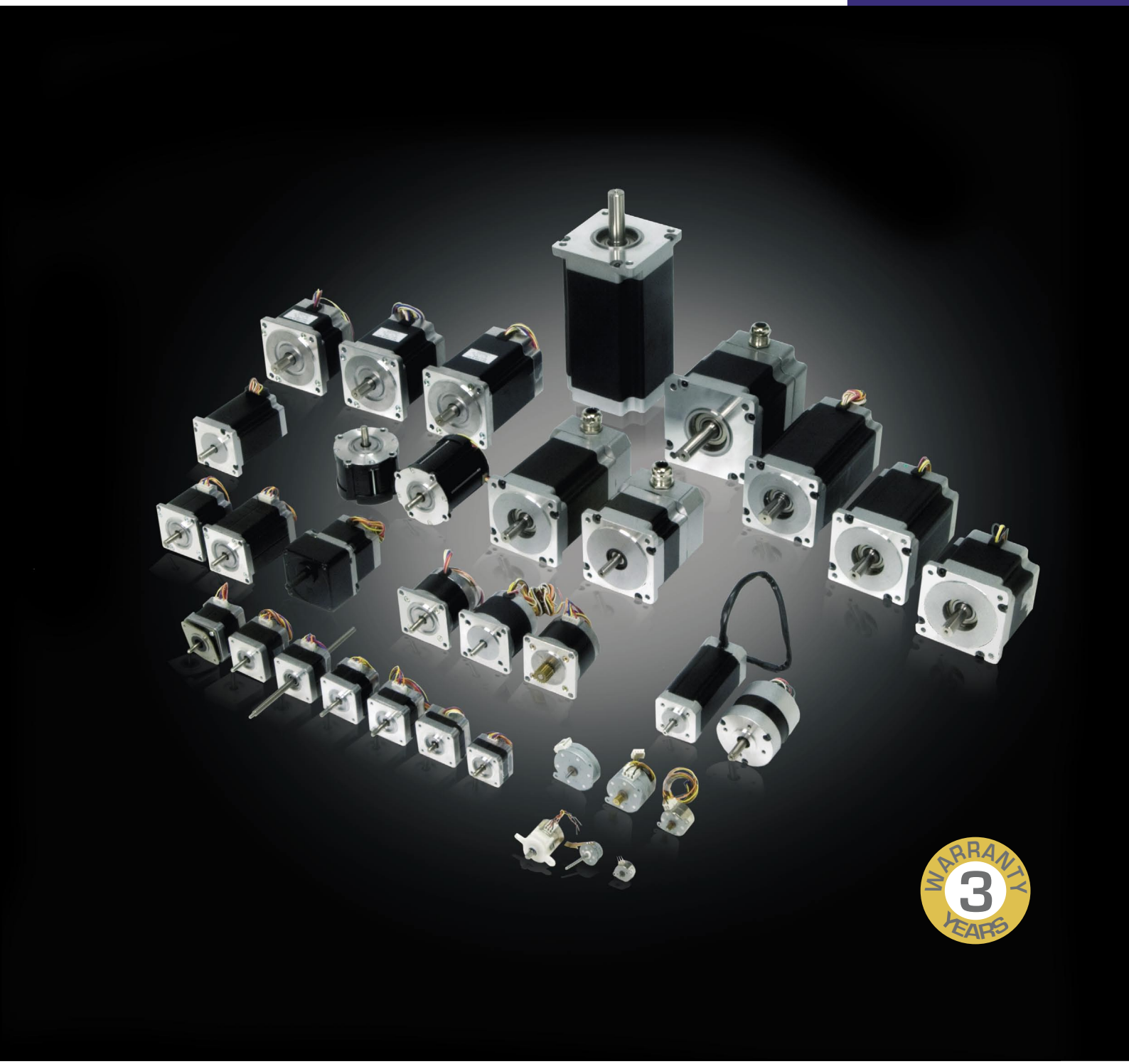
Step motors
DC brushless motors
Encoders & Gearboxes

LOW LOSS



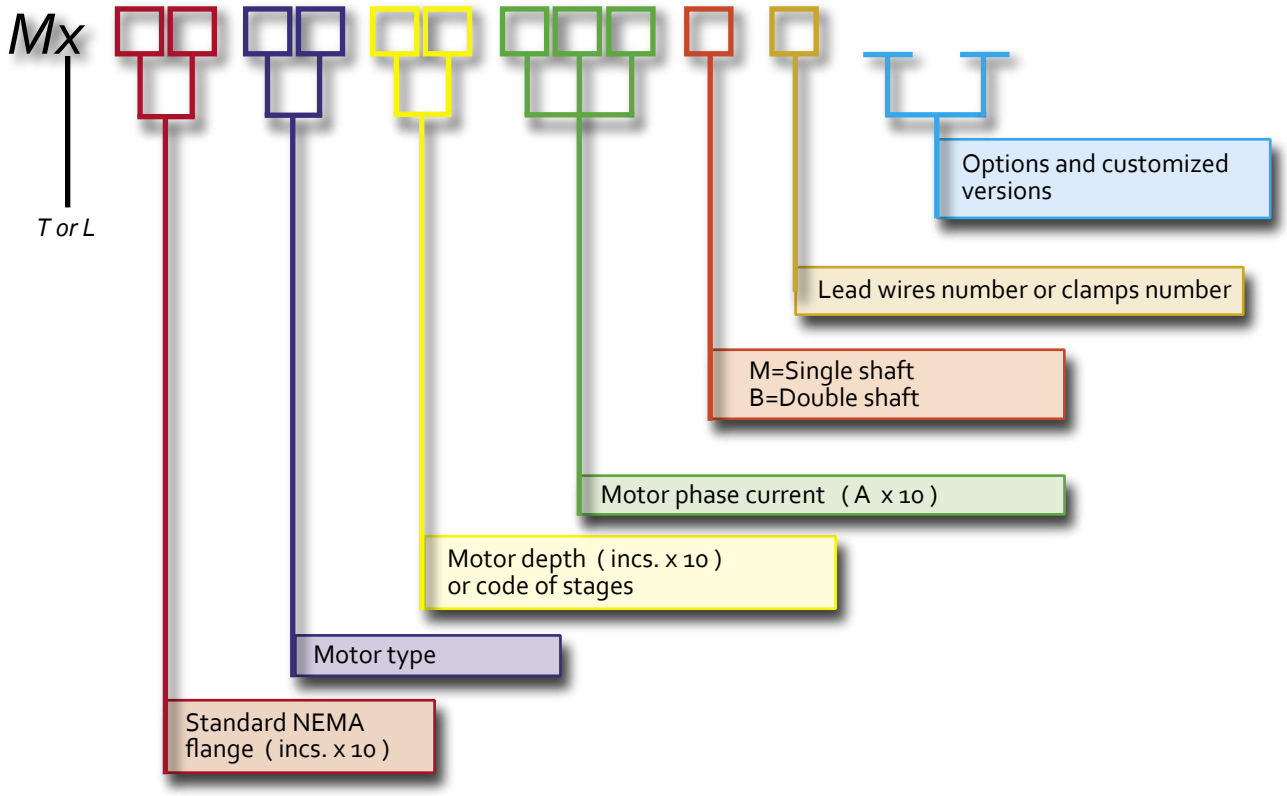
2015

Ever ELETTRONICA

the clever drive

Contents

Motors coding and drive pairing



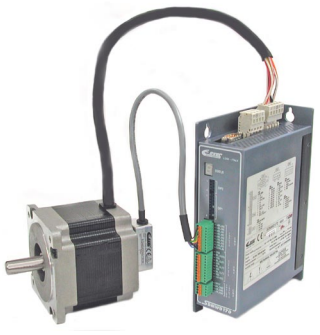
Suggested motor and drive pairings for best performances.

Drive models \ Motor models	MT1xAx MT12FP	MT23Ax MT23FK	MT24FK	MT34Fx (se < 5.0A)	MT34Fx (se > 5.0A)	MT34FV	MT42FN	MT42FV	MT17FB MT23FB	LMED1 LMED5
LW 2014 (max 1.4Arms/ph)	•									Integrated drives
LW3 3032 (max 3.2Arms/ph) LW 2042 SW 2142 (max 4.2Arms/ph)	•	•	•	•						
LW 3050 (max 5.5Arms/ph)		•	•	•						
LW3 3070 (max 7.1Arms/ph) LW 4085 SW 4080 SW 4185 (max 8.0Arms/ph)		•	•	•	•		•			
LW 9060 SW 9060 SW 9160 (max 6.0Arms/ph)						•		•		
SDL 170 SDM 170 (max 8.0Arms/ph)			•	•	•		•			
SDL 180 SDM 180 (max 5.0Arms/ph)	•	•	•	•	•					
M5A (max 6.0Apeack/ph)	•	•	•	•						
DCM (max 0.5Apeack/ph)	•									

• = suggested pairing.

Application suited performances can be obtained from 8 leads motors with series or parallel bipolar connection to the suggested drive.

The performances of the resulting actuators are directly depending on the voltage bus ratings and motor phases driving method.



Available options

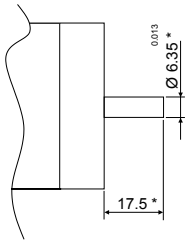
Customizations available on request for the motors series.

Choose from motor models with optimum mechanical and electrical characteristics in a wide ratings range.

Motor model / *Options*	Drawing	MT1xAx MT12FP	MT23Ax MT23FK	MT24FK	MT34FN	MT34FH MT34FP	MT34FV	MT42FN	MT42FV	MT17FB MT23FB	LMED1 LMED5
Double shaft (not available in combination with 'Terminal box with clamps' and 'IP65 protection')	1	●	●	●	●	●	●	●	●	●	-
Customized cable	---	●	●	●	●	●	●	●	●	●	-
***'LowLoss'* magnetic material**	---	-	-	●	●	●	o	●	o	-	-
Connector on board	---	●	●	-	-	-	-	-	-	-	o
Terminal box with clamps	2	-	-	-	●	-	●	●	●	-	-
IP65 protection (always combined with 'Terminal box with clamps')	2 and 3	-	-	-	●	-	●	●	●	-	-
Special front shaft diameter	4	-	●	●	●	●	●	●	●	-	-
Key on front shaft	5	-	-	-	●	●	●	●	●	-	-
D-cut on front shaft	6	●	●	●	●	●	●	-	-	●	●

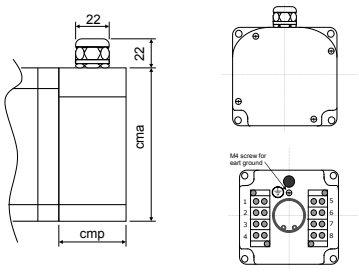
● = on request for not yet provided models - = not available o = supplied as standard

Drawing 1 (double shaft)

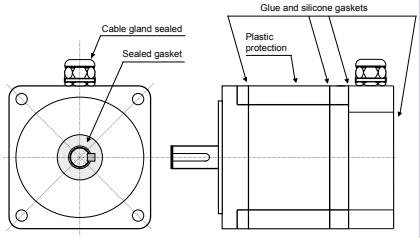


* = customized dimensions on request

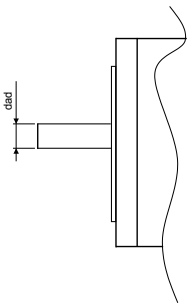
Drawing 2 (terminal box and clamps)



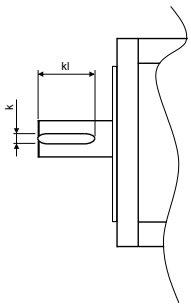
Drawing 3 (IP65)



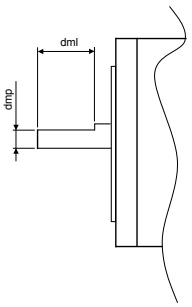
Drawing 4 (front shaft)



Drawing 5 (key on front shaft)



Drawing 6 (D-cut on front shaft)



Method of use and characteristics

General tips for the best use of motors.

To increase the motor's life, reliability and performances, you should follow these few common use tips:

- Fit and tighten the motor flange on a steel or aluminium surface with enough thickness in order to increase stability and improve heat dissipation.
- Do not exceed the maximum radial and axial loads shown in the tables of this catalog for each motor family: exceeding the permitted value results into a shorter bearings life, the only real motor components that are subject to wear.
- Connect the motor with a proper cable, as described in the drives manuals, to prevent failures, security problems and reliability.
- The motor should never be opened or re-assembled, otherwise it will not keep his magnetization with the consequence of a drastic performances loss.
- Observe the environmental and thermal conditions of the motor indicated in the specifications, or you can require a motor with protection degree enough against humidity and dust so that does not deteriorate (IP65). For a better explanation follow the table below:

Motor protection class	Protection index against dust	Protection index against liquids	Description of degree motor protection
IP30	3	0	Protected against ingress of solid objects larger than 2.5 mm. No protection against ingress of liquid from humidity or from dripping or splashing liquids and vapors.
IP54	5	4	Total protection against ingress of solid objects. Protection against the ingress of liquid droplets, vapor or spray from any direction.
IP65	6	5	Total protection against ingress of solids and dusts. Protection against the ingress of liquid droplets, vapor, spray and water jets from any direction.

Connecting the motors

The measured values and the unipolar and bipolar connections of stepper motor.

8 or 6 lead wires motors:

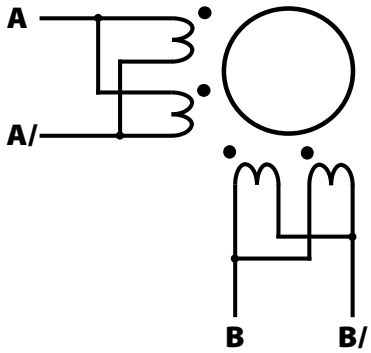
Connection	Resistance (ohms)	Inductance (mH)	Current (Arms)	Holding Torque (Nm)
Unipolar	As in catalog	As in catalog	As in catalog	Catalog x 0.707
Bipolar series	Catalog x 2	Catalog x 4	Catalog x 0.707	As in catalog
Bipolar (half winding)	As in catalog	As in catalog	As in catalog	Catalog x 0.707
Bipolar parallel	Catalog x 0.5	As in catalog	Catalog x 1.414	As in catalog

4 lead wires motors:

Connection	Resistance (ohms)	Inductance (mH)	Current (Arms)	Holding Torque (Nm)
Refer to catalog	As in catalog	As in catalog	As in catalog	As in catalog

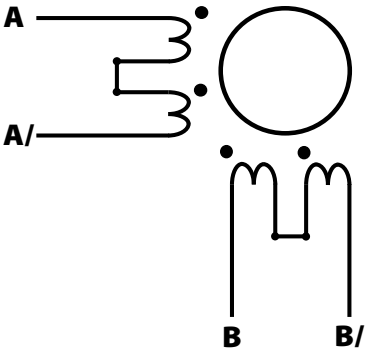
Bipolar parallel and series connections of the motor windings in the 8-wire models.

The bipolar parallel connection utilizes the entire motor winding obtaining very good torque at low speeds and, by maintaining low inductance values, it allows a high torque even at higher speeds.



Wiring diagram of a 8-wire stepper motor connected in bipolar parallel to the drive phases.

Also in 'bipolar series' connection the motor windings are fully used in order to obtain the best torque at low speeds. With this connection, however, due to the high inductance value, the torque decays rapidly as you go up with the speed. The use of high voltages can improve this feature.



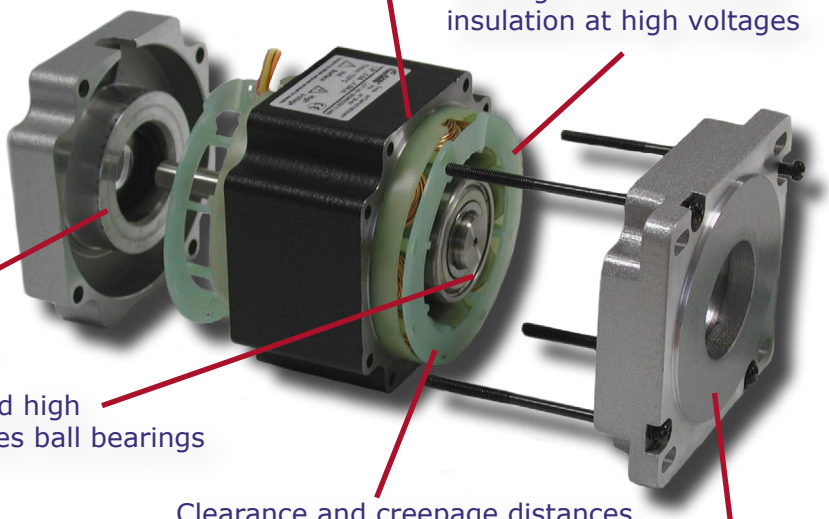
Wiring diagram of a 8-wire stepper motor connected in bipolar series to the drive phases.

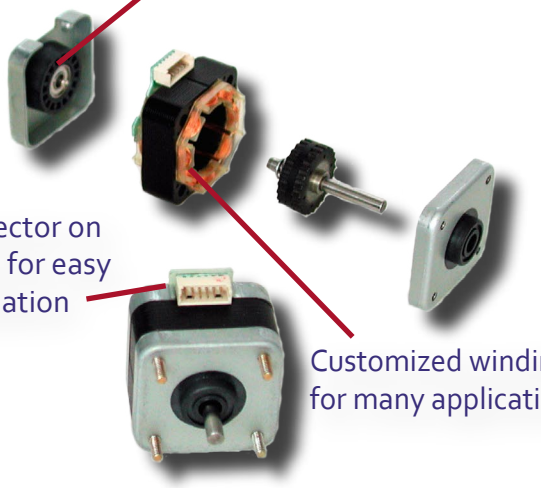
Precision engineering and advanced materials to the basis of performance

The high quality construction and the best motor performances have been achieved through the use of high-coercive magnetic materials, low loss and high temperature resistant, combined with the magnetic fluxes optimization and high precision mechanical solutions.

The motors is built with great care in all components.

The advantages in applications are:
- better torque delivery
- more accurate positioning
- greater stability and less vibration
- long service life
- enhanced security of facilities
- low noise
- high performances with high speed



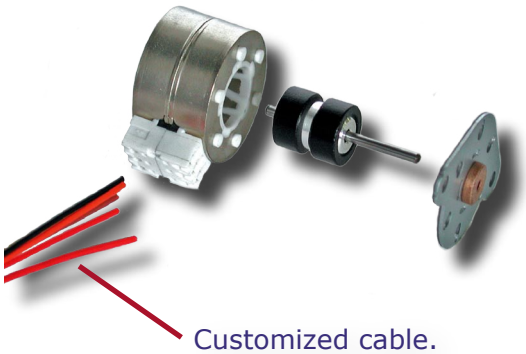


The available motor windings have been designed to meet all needs and to better adapt to the new generation of Ever Elettronica drives.

You can choose motors from the high dynamics series at high speeds or the high torque series at low speeds.

Optionally, with the high performance stepper motors family, you can require the construction with 'low loss' magnetic materials which provide a higher torque, lower temperatures and a more stable rotation.

All motors meet the latest international RoHS LeadFree requirements.



MT10AP / 1,8°

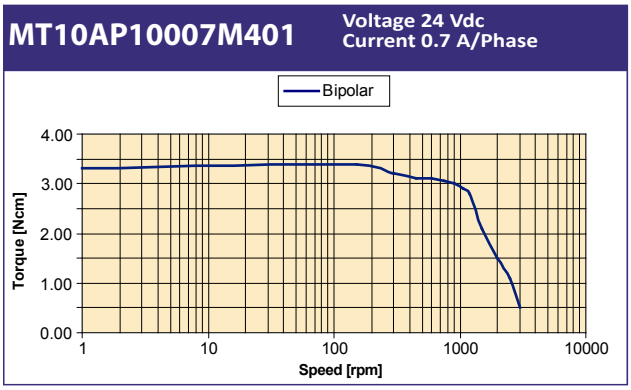
• General characteristics

Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-10° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Shaft radial play	20 µm max @450 g. load
Shaft axial play	80 µm max @450 g. load

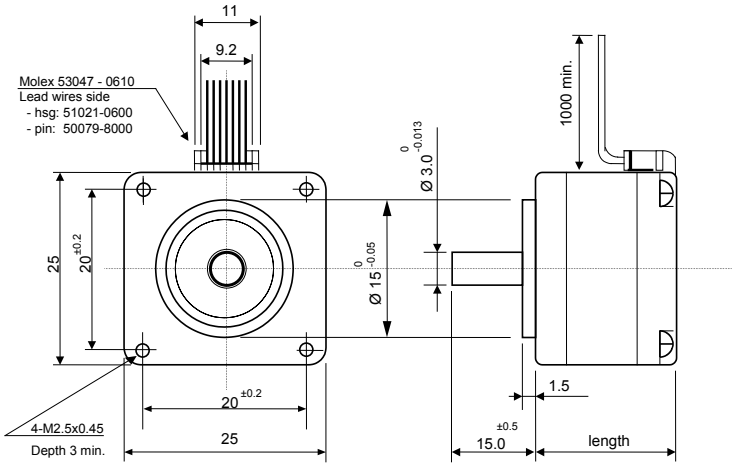
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT10AP10007M401	2.66	0.70	3.80	2.00	0.033	0.0020	2	4	23.5	0.05	––

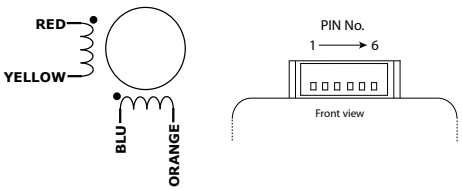
• Torque curves



• Dimensions (Unit: mm)



• Wiring diagrams



PHASE	A	A/	B	B/
PIN No.	4	6	1	3
LEAD COLOR	RED	YELLOW	BLUE	ORANGE

MT10AU / 3,75°

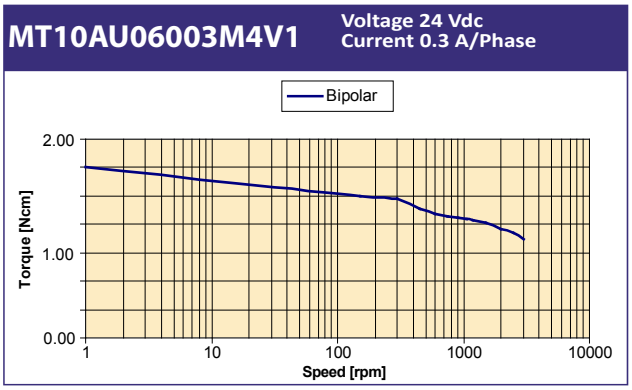
• General characteristics

Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-10° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Shaft radial play	20 µm max @450 g. load
Shaft axial play	80 µm max @450 g. load

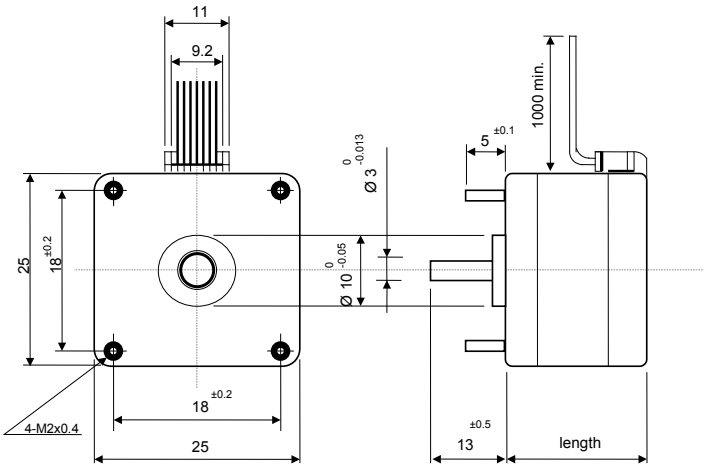
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT10AU06003M4V1	4.20	0.30	14.0	5.70	0.012	0.004	2	4	18.0	0.045	––

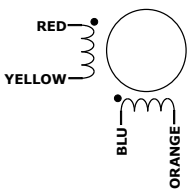
• Torque curves

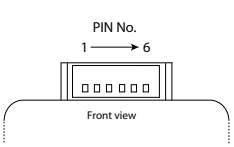


• Dimensions (Unit: mm)



• Wiring diagrams



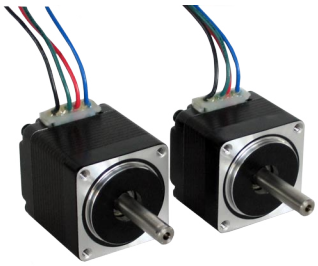


PHASE	A	A/	B	B/
PIN No.	4	6	1	3
LEAD COLOR	RED	YELLOW	BLUE	ORANGE

Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT12FP / 1,8°

• General characteristics



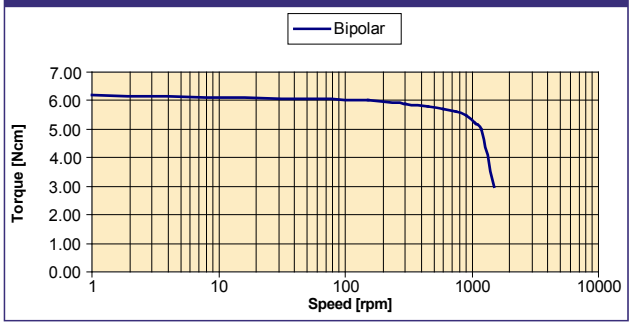
Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	28 N
Max axial force	10 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

• Specifications

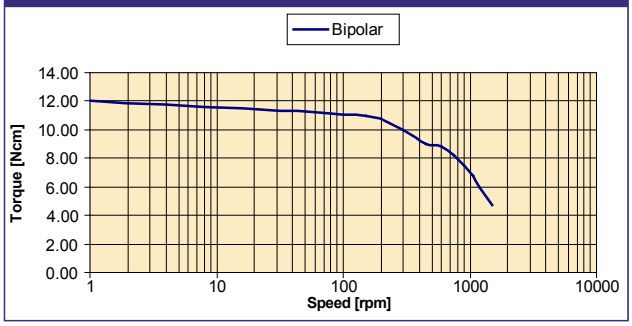
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT12FP12007M4	3.80	0.67	5.60	3.40	0.059	––	9	4	32.0	0.11	––
MT12FP20007M4	6.20	0.67	9.20	7.20	0.117	––	18	4	51.0	0.20	––

• Torque curves

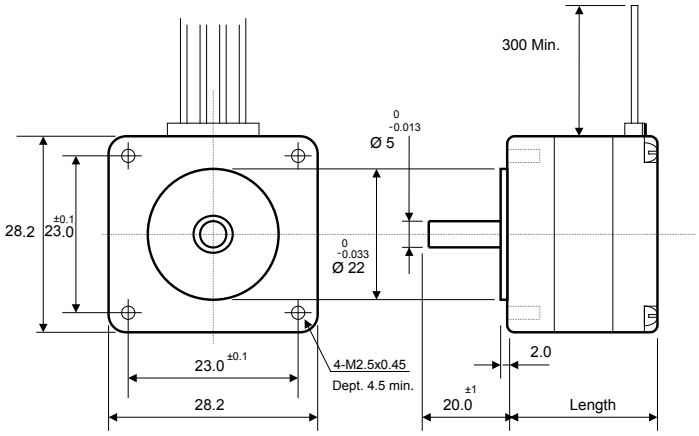
MT12FP12007M4 Voltage 24 Vdc Current 0.7 A/Phase



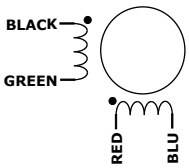
MT12FP20007M4 Voltage 24 Vdc Current 0.7 A/Phase



• Dimensions (Unit: mm)



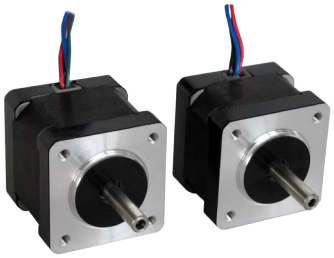
• Wiring diagrams



PHASE	A	A/	B	B/
LEAD COLOR	BLACK	GREEN	RED	BLUE

MT14FP / 1,8°

• General characteristics

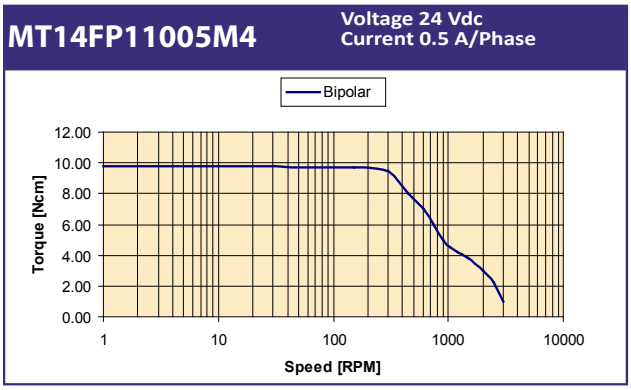


Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	28 N
Max axial force	10 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

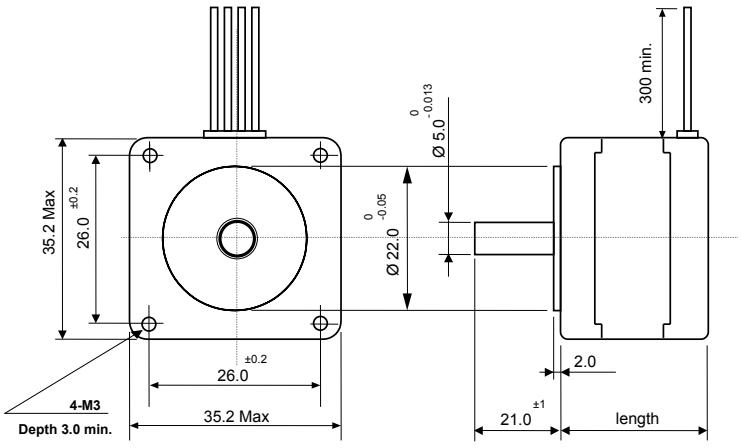
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT14FP11005M4	10.00	0.50	20.00	14.00	0.098	0.008	11.0	4	28	0.14	––

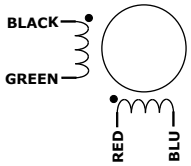
• Torque curves



• Dimensions (Unit: mm)



• Wiring diagrams



PHASE	A	A/	B	B/
LEAD COLOR	BLACK	GREEN	RED	BLUE

Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
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DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT17AP / 1,8°

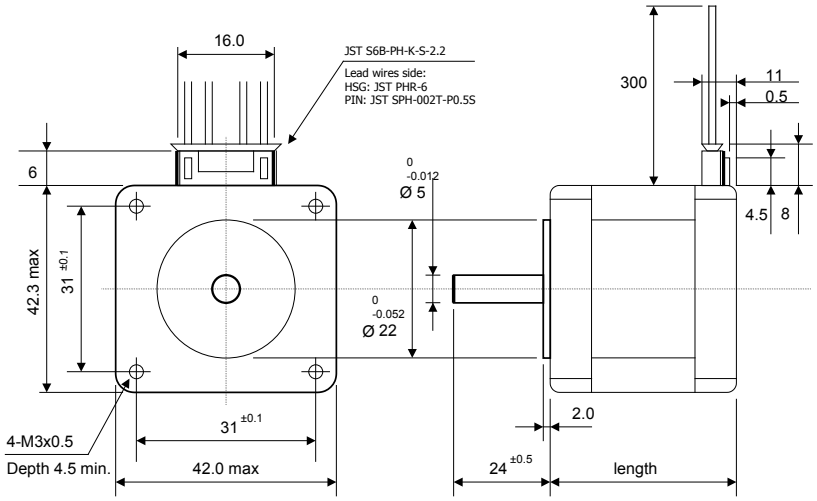
• General characteristics

Step accuracy	**±5%**
Temperature rise	**80° C max @ nominal current**
Ambient temperature	**-10° C ~ +50° C**
Insulation resistance	**100Mohm min. 500Vdc.**
Dielectric strength	**500Vac 1 minute**
Insulation class	**B, 120° C**
Protection	**IP30**
Shaft radial play	**20 µm max @450 g. load**
Shaft axial play	**80 µm max @450 g. load**

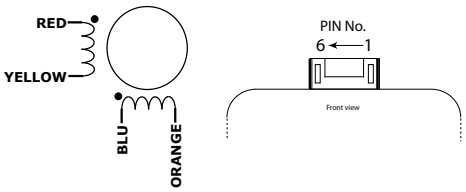
• Specifications

Model Code	*Rated Voltage (V)*	*Phase Current (A)*	*Phase Resistance (ohm)*	*Phase Inductance (mH)*	*Holding Torque (Nm)*	*Detent Torque (Nm)*	*Rotor Inertia (g.cm²)*	*Wires*	*Motor Length (mm)*	*Weight (Kg)*	*Special (see pag.4)*
MT17AP10006M401	2.90	0.70	4.20	8.80	0.130	0.013	24	4	27.0	0.18	front shaft 15.0 mm and Ø 5.0 mm + customized pinion
ML17AP14003M405	6.00	0.33	18.00	24.00	0.117	0.014	34	4	34.0	0.20	front shaft 20.5 mm + special fixing
MT17AP14004B404	10.70	0.29	37.00	44.00	0.235	0.014	37	4	34.0	0.20	front shaft 20.0 mm + double shaft 14.5 mm and Ø 5.0 mm + cable length 1000 mm
MT17AP14008M407	3.50	0.85	4.10	8.50	0.245	0.019	37	4	34.0	0.20	front shaft 20.0 mm + D-cut dml=15.0 mm dmp= 4.5 mm + special cable
MT17AP15004M402	12.00	0.40	30.0	37.00	0.206	--	45	4	34.0	0.23	--
MT17AP15010M407	3.20	1.00	3.20	6.60	0.230	0.019	40	4	33.0	0.22	--
ML17AP15010M408	4.20	1.00	4.90	7.70	0.245	0.009	45	4	38.0	0.25	front shaft 20 mm + special fixing
MT17AP18010M4	4.70	1.00	4.70	10.50	0.490	--	80	4	45.0	0.35	--
ML17AP18020B4	2.16	2.00	1.08	2.40	0.450	0.021	75	4	48.0	0.35	double shaft 13.5 mm and Ø 5.0 mm and supplied without cable

• Dimensions (Unit: mm)



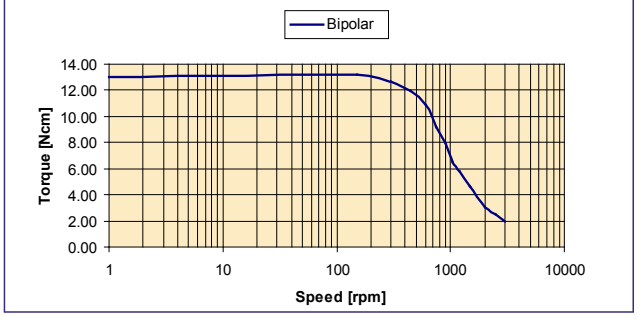
• Wiring diagrams



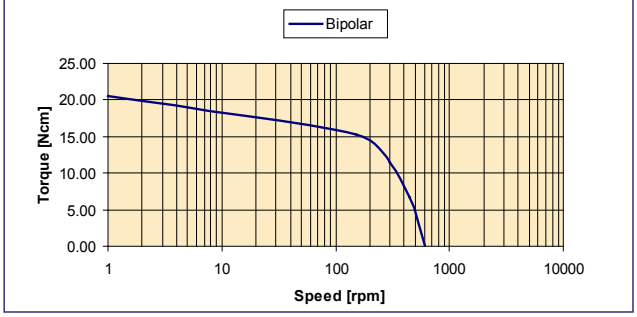
PHASE	A	A/	B	B/
PIN No.	4	6	3	1
LEAD COLOR	RED	YELLOW	BLUE	ORANGE

• Torque curves

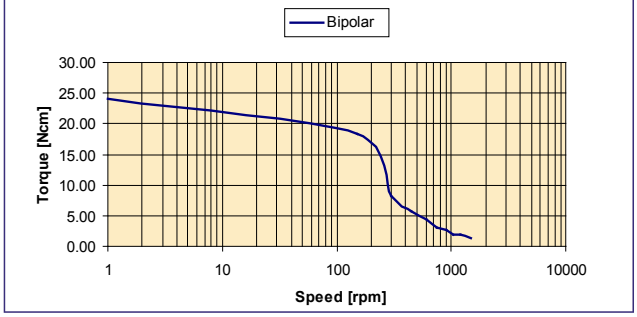
MT17AP10006M401
Voltage 24 Vdc
Current 0.6 A/Phase



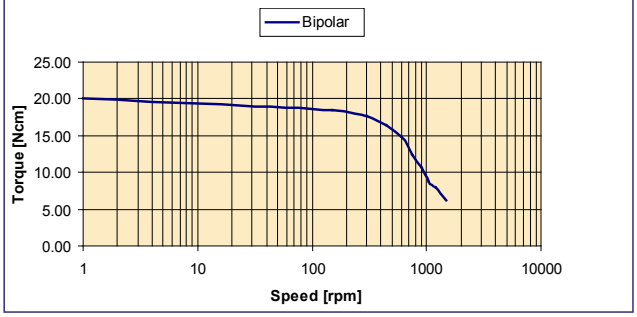
ML17AP14003M405
Voltage 24 Vdc
Current 0.3 A/Phase



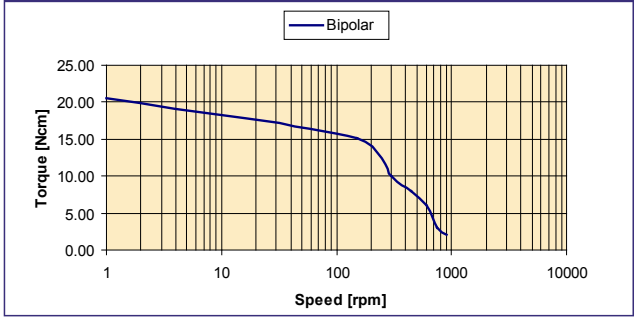
MT17AP14004B404
Voltage 24 Vdc
Current 0.4 A/Phase



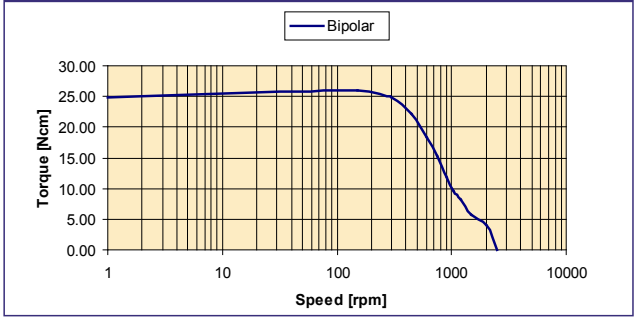
MT17AP14008M407
Voltage 24 Vdc
Current 0.8 A/Phase



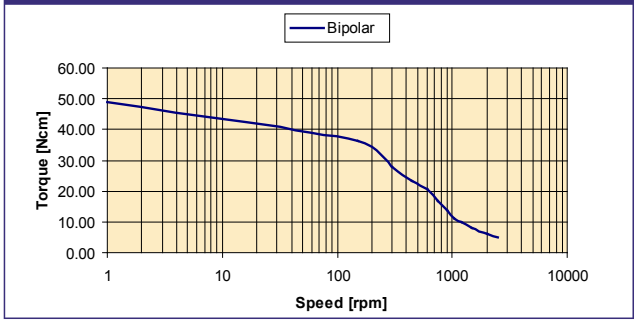
MT17AP15004M402
Voltage 24 Vdc
Current 0.4 A/Phase



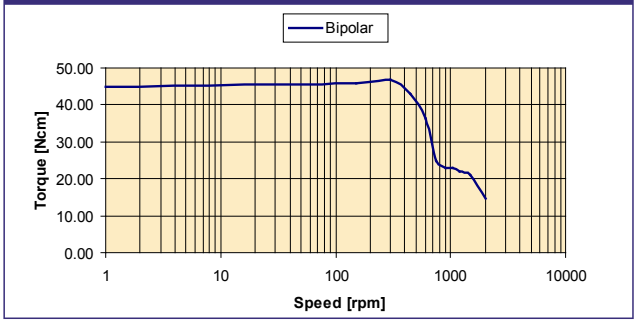
Mx17AP15010M40x
Voltage 24 Vdc
Current 1.0 A/Phase



MT17AP18010M4
Voltage 24 Vdc
Current 1.0 A/Phase



ML17AP18020B4
Voltage 24 Vdc
Current 2.0 A/Phase



MT23AK / 1,8°

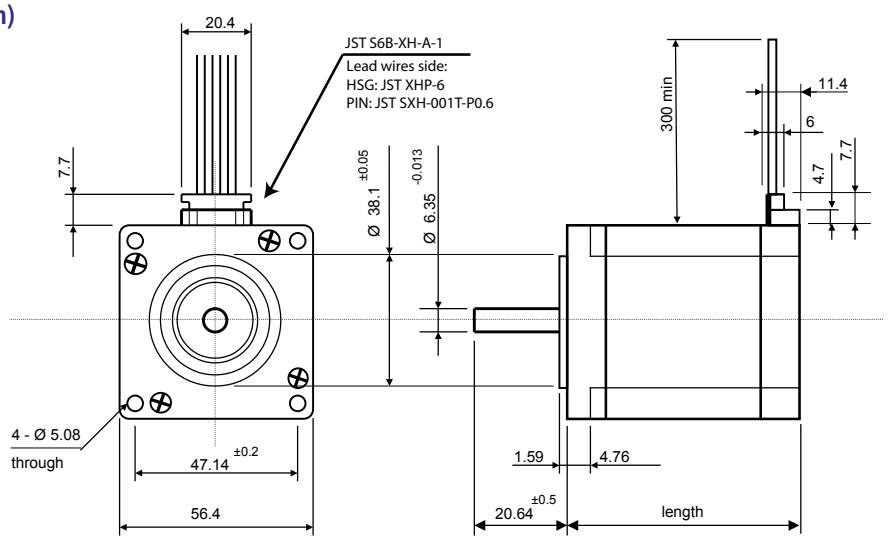
• General characteristics

Step accuracy	**±5%**
Temperature rise	**80° C max @ nominal current**
Ambient temperature	**-10° C ~ +50° C**
Insulation resistance	**100Mohm min. 500Vdc.**
Dielectric strength	**500Vac 1 minute**
Insulation class	**B, 120° C**
Protection	**IP30**
Shaft radial play	**20 µm max @450 g. load**
Shaft axial play	**80 µm max @450 g. load**

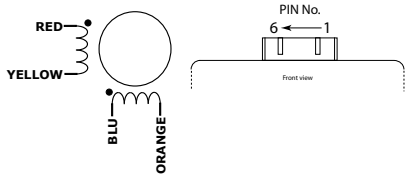
• Specifications

Model Code	*Rated Voltage (V)*	*Phase Current (A)*	*Phase Resistance (ohm)*	*Phase Inductance (mH)*	*Holding Torque (Nm)*	*Detent Torque (Nm)*	*Rotor Inertia (g.cm²)*	*Wires*	*Motor Length (mm)*	*Weight (Kg)*	*Special (see pag.4)*
MT23AK17004M601	12.0	0.40	30.0	34.0	0.497	--	150	6	42.0	0.47	front shaft dad=Ø 8.0 mm + D-cut dml=15.0 mm and dmp=7.0 mm
MT23AK22010M403	5.00	1.00	5.00	20.70	0.882	--	280	4	54.0	0.68	wires length 600 mm
MT23AK22015M4VC	5.10	1.50	3.40	17.50	0.950	0.049	200	4	54.0	0.68	low inertia and high torque rotor
MT23AK22017M403	4.40	1.70	2.60	10.90	1.078	0.049	200	4	54.0	0.68	no connector on board + low inertia rotor
MT23AK22033M8	2.10	3.30	0.69	1.20	0.970	--	240	8	54.0	0.68	no connector on board + low inertia rotor
MT23AK30015M4VC	6.30	1.50	4.20	18.00	1.760	--	360	4	76.0	1.05	low inertia and high torque rotor
MT23AK30033M8	3.00	3.30	0.89	1.70	1.300	--	440	8	76.0	1.05	no connector on board
MT23AK30035M4VC	3.00	3.50	0.85	2.40	1.675	0.300	360	4	76.0	1.05	low inertia and high torque rotor

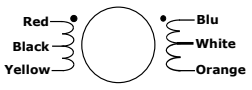
• Dimensions (Unit: mm)

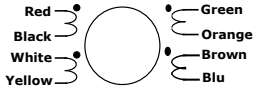


• Wiring diagrams



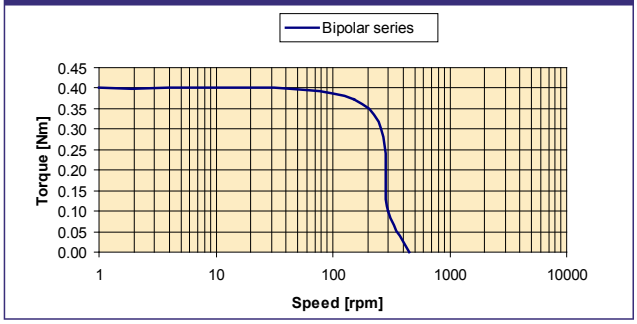
PHASE	A	A/	B	B/
PIN No.	1	3	4	6
LEAD COLOR	RED	YELLOW	BLUE	ORANGE



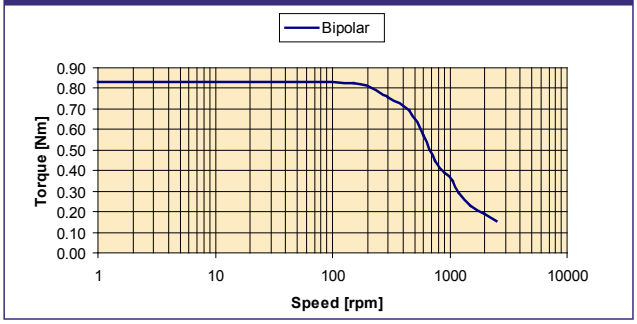


• Torque curves

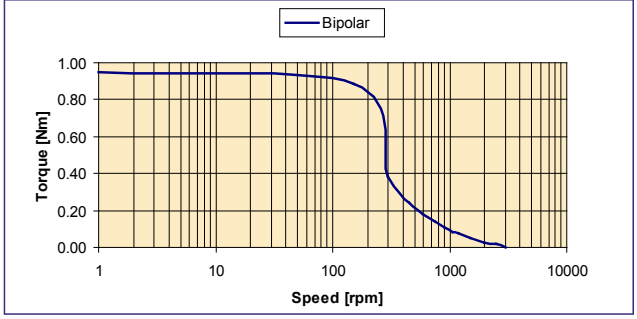
MT23AK17004M601
Voltage 24 Vdc
Current 0.3 A/Phase (series)



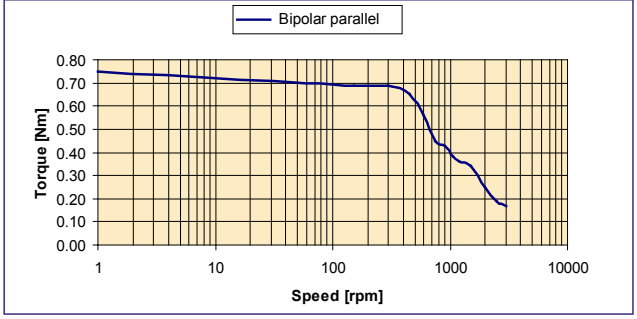
ML23AK22010M403
Voltage 24 Vdc
Current 1.0 A/Phase



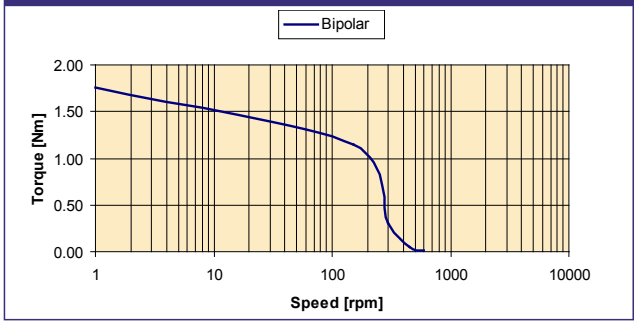
MT23AK22015M4VC
Voltage 24 Vdc
Current 1.5 A/Phase



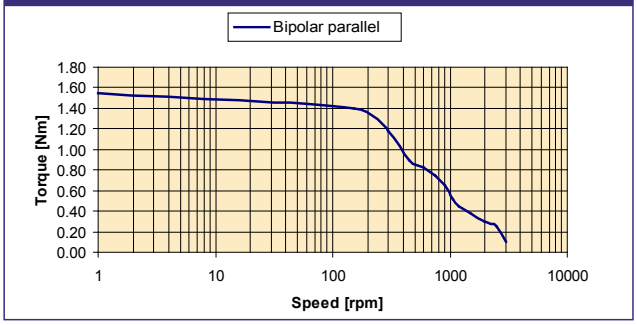
MT23AK22033M8
Voltage 48 Vdc
Current 4.6 A/Phase (parallel)



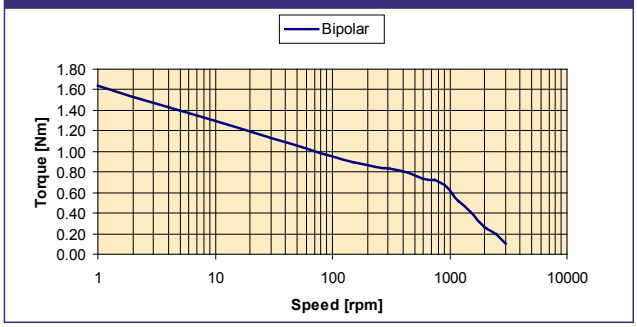
MT23AK30015M4VC
Voltage 48 Vdc
Current 1.5 A/Phase



MT23AK30033M8
Voltage 48 Vdc
Current 4.6 A/Phase (parallel)



MT23AK30035M4VC
Voltage 48 Vdc
Current 3.5 A/Phase



MT23FK / 1,8°

• General characteristics

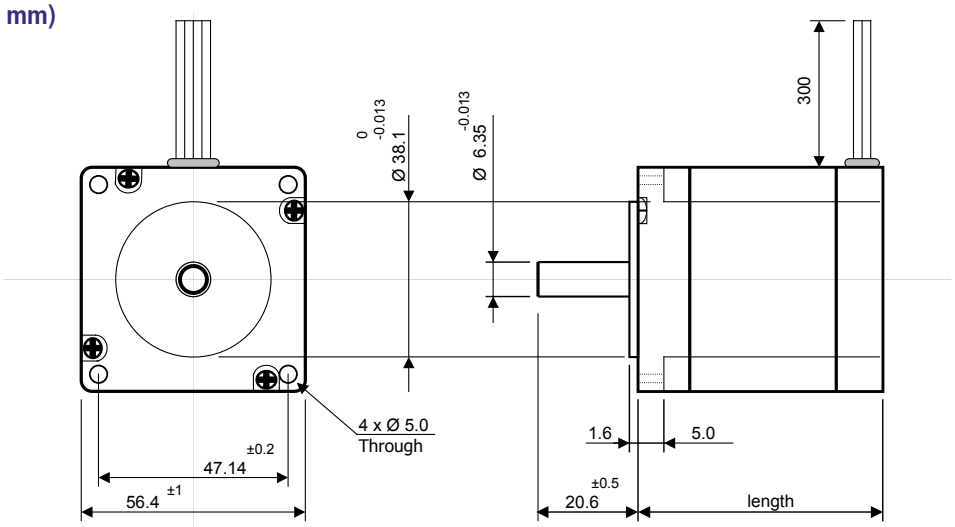
Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	75 N
Max axial force	15 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

• Specifications

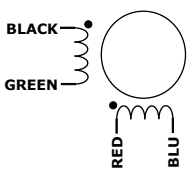
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT23FK17028M4	2.00	2.80	0.70	1.40	0.539	0.021	120	4	41.0	0.37	––
MT23FK20021B4	2.94	2.10	1.40	3.90	0.980	0.036	275	4	51.0	0.50	double shaft 19.0 mm and Ø 6.35 mm
MT23FK22010M8G1	6.60	1.00	6.60	8.20	5.890*	0.040	275	8	51.0	0.65	with integrated gearbox 1:11 (length +32 mm)
MT23FK22020B801	3.60	2.00	1.80	3.00	1.269	0.040	300	8	56.0	0.70	double shaft 13.5 mm and Ø 6.35 mm + lead wires length 1000 mm
MT23FK22033M8	2.27	3.30	0.69	1.20	1.269	0.040	300	8	56.0	0.70	––
MT23FK30028M4	3.20	2.80	1.13	3.60	1.890	0.068	480	4	76.0	1.00	––
MT23FK30030B4	3.00	3.00	1.00	4.00	1.890	0.068	480	4	76.0	1.00	double shaft 15.0 mm and Ø 6.35 mm
MT23FK30042M401	2.10	4.20	0.50	1.60	1.890	0.068	480	4	76.0	1.00	front shaft 30.0 mm and Ø 8.0 mm and lead wires with tube

* Measured torque at the gearbox output

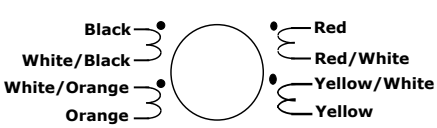
• Dimensions (Unit: mm)



• Wiring diagrams

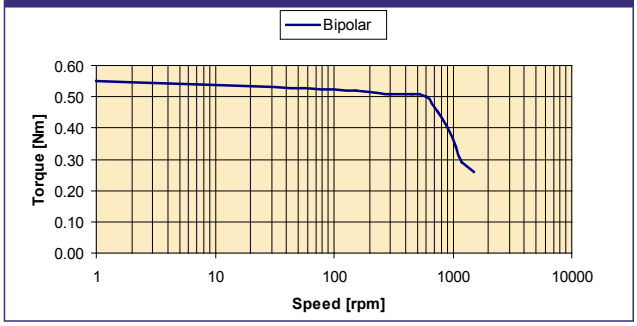


PHASE	A	A/	B	B/
LEAD COLOR	BLACK	GREEN	RED	BLUE

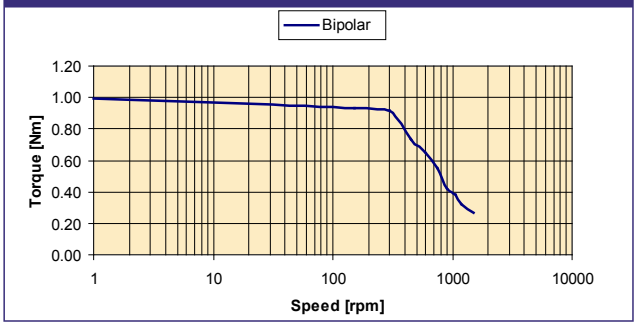


• Torque curves

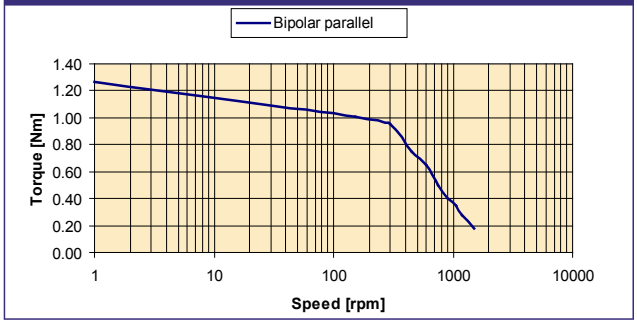
MT23FK17028M4
Voltage 30 Vdc
Current 2.8 A/Phase



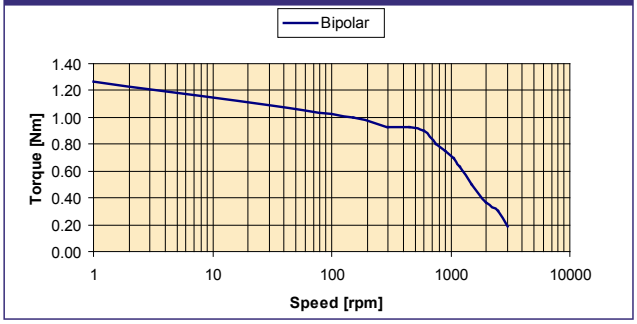
MT23FK20021B4
Voltage 30 Vdc
Current 2.1 A/Phase



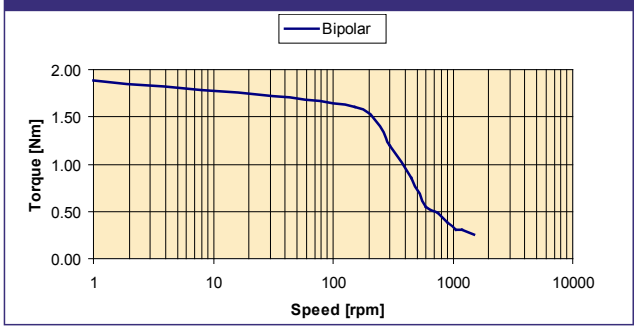
MT23FK22033M8
Voltage 30 Vdc
Current 4.6 A/Phase (parallel)



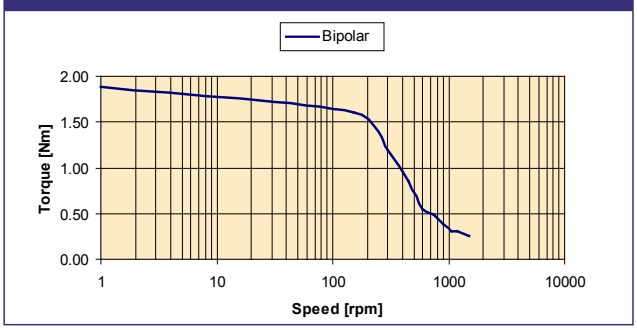
MT23FK22020B801
Voltage 30 Vdc
Current 2.8 A/Phase (parallel)



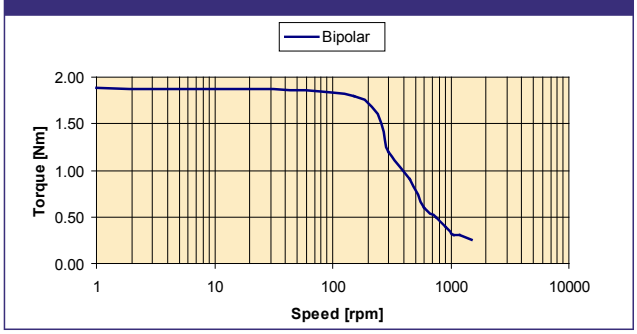
MT23FK30028M4
Voltage 30 Vdc
Current 2.8 A/Phase



MT23FK30030B4
Voltage 30 Vdc
Current 3.0 A/Phase

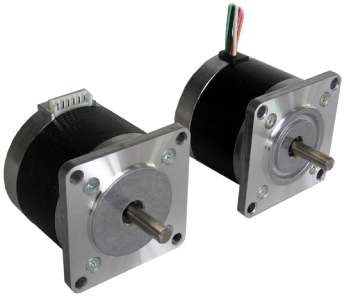


MT23FK30042M401
Voltage 30 Vdc
Current 4.2 A/Phase



MT23AL / 1,8°

• General characteristics

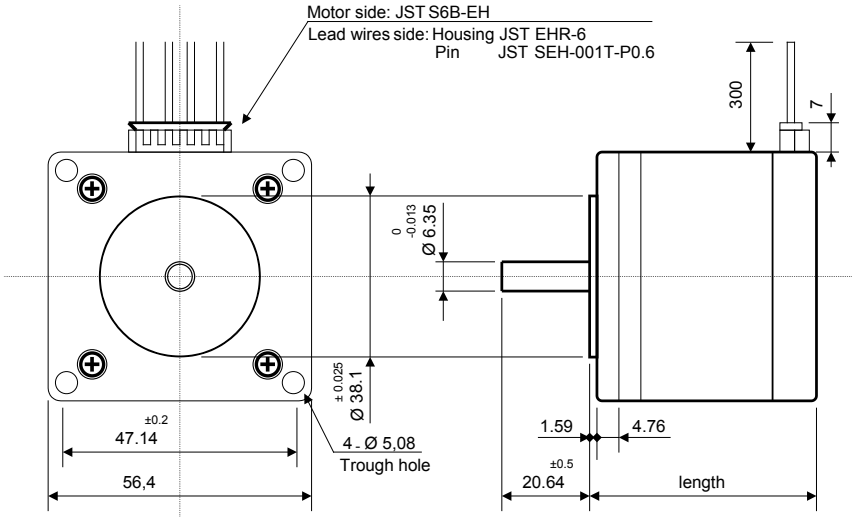


Step accuracy	**±5%**
Temperature rise	**80° C max @ nominal current**
Ambient temperature	**-10° C ~ +50° C**
Insulation resistance	**100Mohm min. 500Vdc.**
Dielectric strength	**500Vac 1 minute**
Insulation class	**B, 120° C**
Protection	**IP30**
Shaft radial play	**20 µm max @450 g. load**
Shaft axial play	**80 µm max @450 g. load**

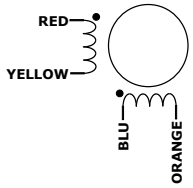
• Specifications

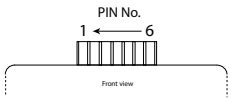
Model Code	*Rated Voltage (V)*	*Phase Current (A)*	*Phase Resistance (ohm)*	*Phase Inductance (mH)*	*Holding Torque (Nm)*	*Detent Torque (Nm)*	*Rotor Inertia (g.cm²)*	*Wires*	*Motor Length (mm)*	*Weight (Kg)*	*Special (see pag.4)*
MT23AL20010M816	5.30	1.00	5.30	9.40	0.657	0.054	120	8	49.5	0.45	no connector on board and special cable
MT23AL20014M451	3.50	1.40	2.50	9.40	0.490	––	110	4	49.5	0.45	special cable

• Dimensions (Unit: mm)

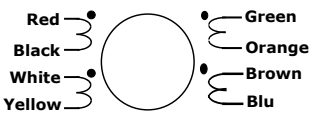


• Wiring diagrams



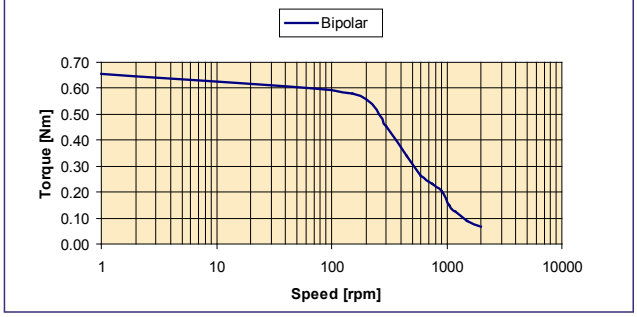


PHASE	A	A/	B	B/
PIN No.	6	4	3	1
LEAD COLOR	RED	YELLOW	BLUE	ORANGE

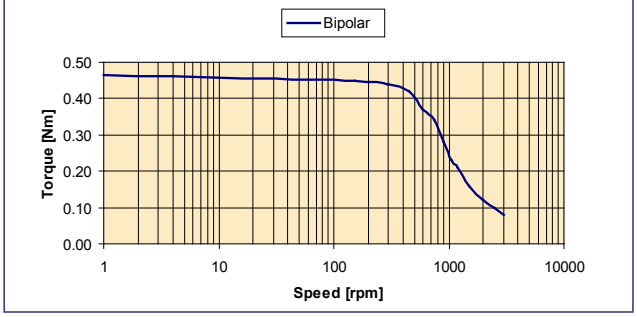


- Torque curves

MT23AL20010M816 Voltage 60 Vdc Current 1.4 A/Phase (parallel)



MT23AL20014M451 Voltage 60 Vdc Current 1.4 A/Phase



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT24FK / 1,8°

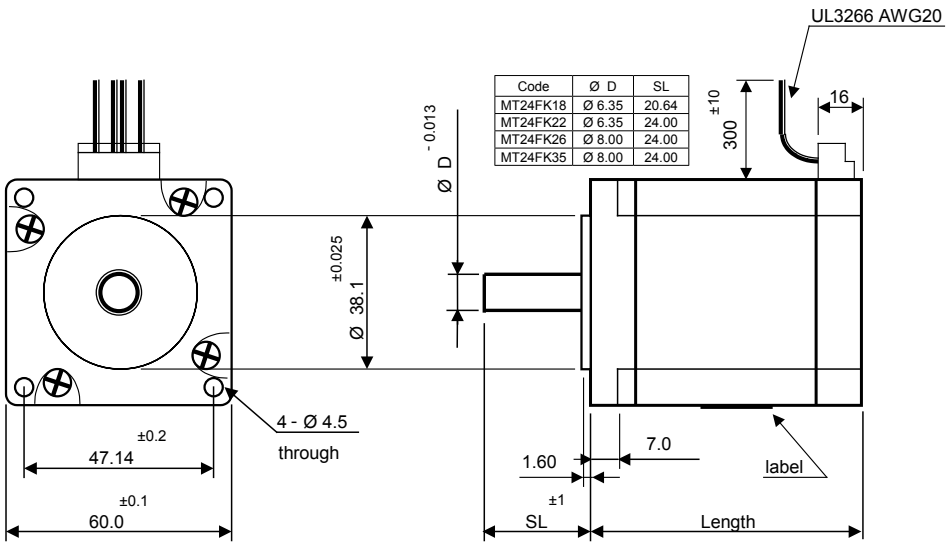
• General characteristics

Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	75 N
Max axial force	15 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

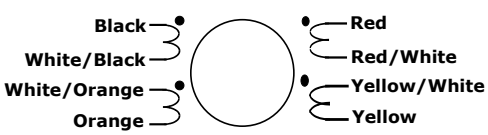
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT24FK18025B801	2.50	2.50	1.00	1.40	1.078	0.050	275	8	47.0	0.60	double shaft 19.0 mm and Ø 6.35 mm
MT24FK22020M8	3.60	2.00	1.80	3.60	1.617	0.070	400	8	56.0	0.77	––
MT24FK22033B802	2.64	3.30	0.80	2.00	1.617	0.070	400	8	56.0	0.77	front shaft 20.64 mm and Ø 6.35 mm + double shaft 19.0 mm and Ø 6.35 mm
MT24FK26021M801	5.46	2.10	2.60	4.60	2.150	0.090	570	8	67.0	1.20	front shaft with D–cut dml=20.0 mm and dmp= 7.5 mm
MT24FK35030M801	3.90	3.00	1.30	3.20	3.300	0.100	840	8	87.0	1.40	wires length 2000 mm
MT24FK35035B801	3.30	3.50	0.94	2.31	3.500	0.100	840	8	88.0	1.40	front shaft with D–cut dml=20.0 mm and dmp=7.5 mm + double shaft 17.5 mm and Ø 6.35 mm + encoder fixing + wires length 2000 mm

• Dimensions (Unit: mm)



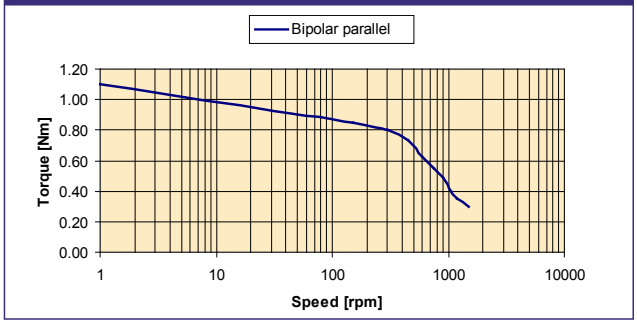
• Wiring diagrams



- Torque curves

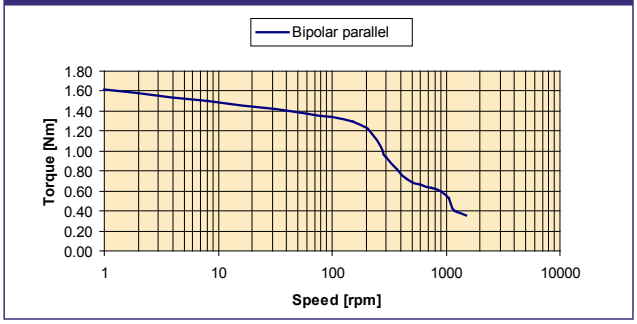
MT24FK18025B801

Voltage 30 Vdc
Current 3.5 A/Phase (parallel)



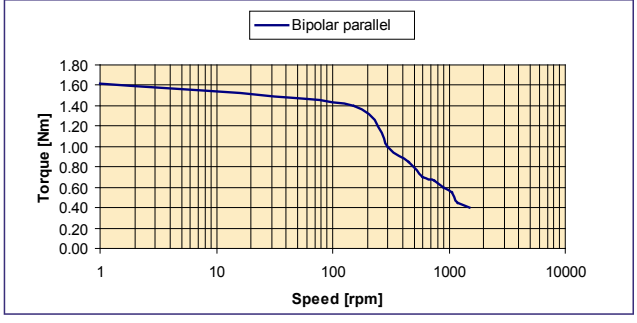
MT24FK22020M8

Voltage 30 Vdc
Current 2.8 A/Phase (parallel)



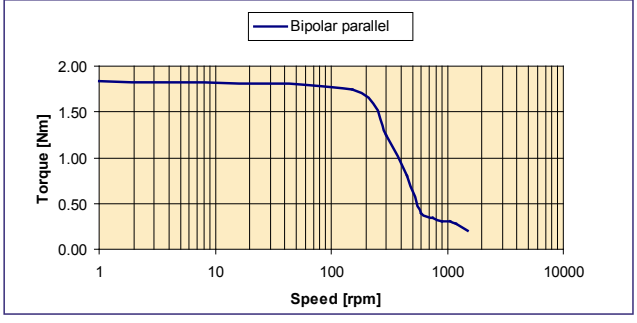
MT24FK22033B802

Voltage 30 Vdc
Current 4.6 A/Phase (parallel)



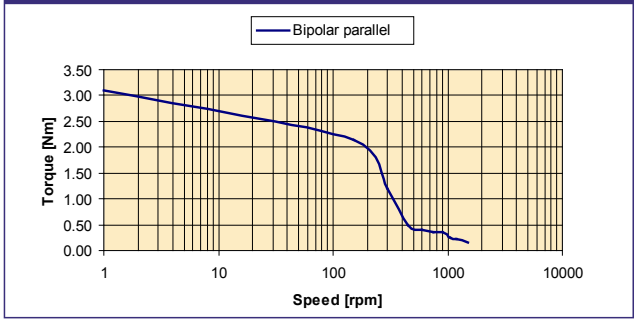
MT24FK26021M801

Voltage 30 Vdc
Current 2.9 A/Phase (parallel)



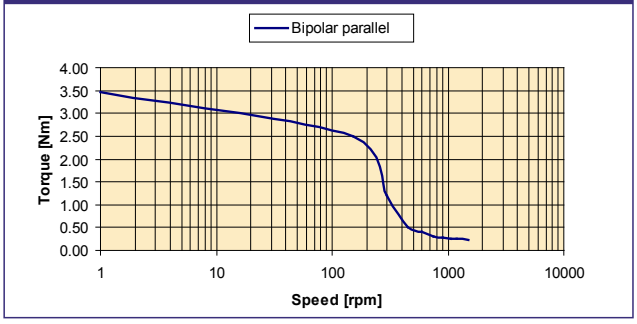
MT24FK35030M801

Voltage 30 Vdc
Current 4.2 A/Phase (parallel)



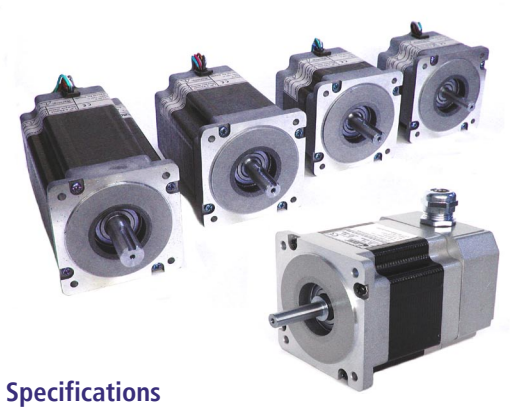
MT24FK35035B801

Voltage 30 Vdc
Current 5.0 A/Phase (parallel)



Mx34FN / 1,8°

• General characteristics

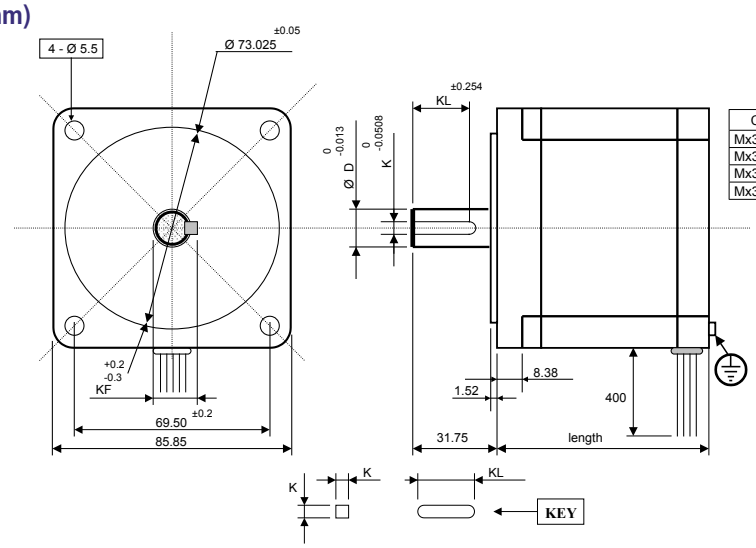


Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	820Vac 1s 3mA
Insulation class	B, 120° C
Protection	IP30 (IP54 and IP65 on request)
Max radial force	220 N
Max axial force	60 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

• Specifications

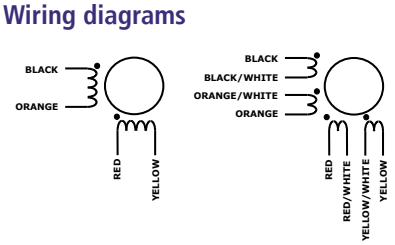
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT34FN26043M801	2.45	4.30	0.57	1.70	3.40	0.08	1000	8	65.0	1.70	terminal clamps CMA= 85.85 mm and CMP= 34.0 mm + Protection IP65 + front shaft DAD=Ø 9.525 mm with key K=3.0 and KL= 22.0 mm
MT34FN31035M801	3.71	3.50	1.06	4.35	4.50	0.13	1400	8	80.0	2.30	front shaft 30,5 mm DAD=Ø 9.525 mm
ML34FN31042M8K	3.36	4.20	0.80	3.50	4.50	0.13	1400	8	80.0	2.30	––
ML34FN31060M8K	2.34	6.00	0.39	1.70	4.50	0.13	1400	8	80.0	2.30	––
ML34FN31060B8K	2.34	6.00	0.39	1.70	4.50	0.13	1400	8	80.0	2.30	double shaft 17.5 mm and Ø 6.35 mm
MT34FN31067M801	3.00	6.70	0.45	1.70	4.50	0.13	1400	8	80.0	2.30	front shaft 30,5 mm DAD=Ø 9.525 mm with key K=3,0 mm and KL= 22.0 mm and cable with tube
ML34FN47035M8K	4.55	3.50	1.30	8.30	8.50	0.25	2700	8	118.0	3.80	––
ML34FN47060M8K	3.24	6.00	0.54	3.00	8.50	0.25	2700	8	118.0	3.80	––
ML34FN47060B8K	3.24	6.00	0.54	3.00	8.50	0.25	2700	8	118.0	3.80	double shaft 17.5 mm and Ø 6.35 mm
MT34FN47060M808	3.24	6.00	0.54	3.00	8.50	0.25	2700	8	152.0	3.80	terminal clamps CMA=85.85 mm and CMP= 34.0 mm + Protection IP65
MT34FN47084M401	2.27	8.40	0.27	3.00	8.50	0.25	2700	4	118.0	3.80	tube on wires lenght 1000 mm + front shaft DAD=Ø 9.525 mm with key K= 3,0 mm and KL= 22.0 mm
ML34FN62060M8K	4.20	6.00	0.70	4.80	12.50	0.38	4000	8	156.0	5.30	––

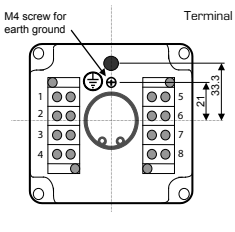
• Dimensions (Unit: mm)



Code	Ø D	K	KL	KF
Mx34FN26	Ø 12,70	3,175	22,52	14,097
Mx34FN31	Ø 12,70	3,175	22,52	14,097
Mx34FN47	Ø 12,70	3,175	22,52	14,097
Mx34FN62	Ø 15.87	4,762	22,23	17,907

• Wiring diagrams



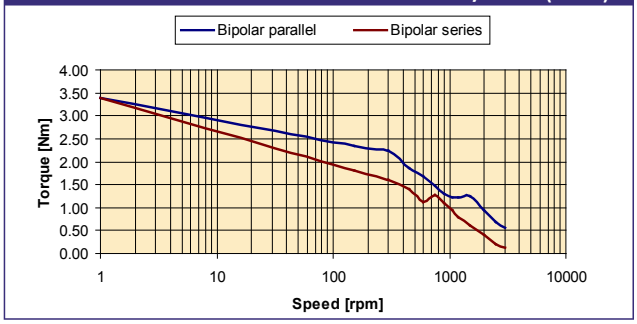


PIN No.	1	2	3	4	5	6	7	8
LEAD COLOR	BLACK	ORANGE WHITE	BLACK WHITE	ORANGE	RED	YELLOW WHITE	RED WHITE	YELLOW

• Torque curves

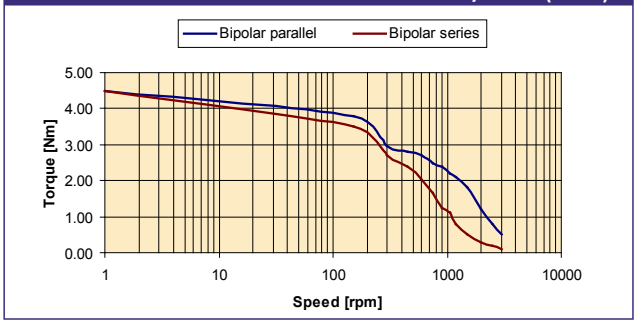
MT34FN26043M801

Voltage 70 Vdc
Current 6.0 A/Phase (parallel)
3.0 A/Phase (series)



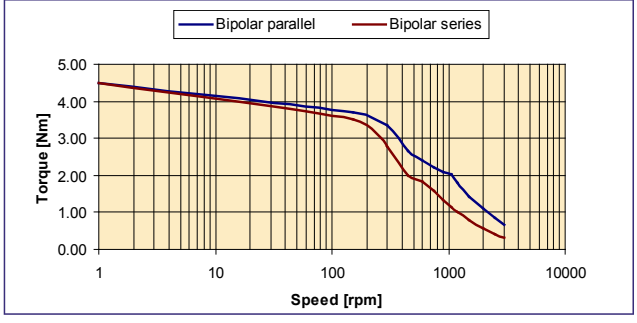
MT34FN31035M801

Voltage 110 Vdc
Current 5.0 A/Phase (parallel)
2.5 A/Phase (series)



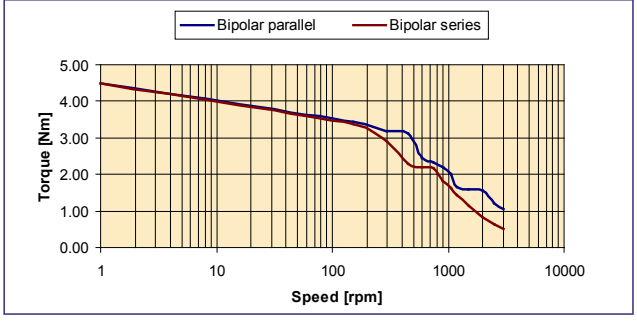
ML34FN31042M8K

Voltage 110 Vdc
Current 6.0 A/Phase (parallel)
3.0 A/Phase (series)



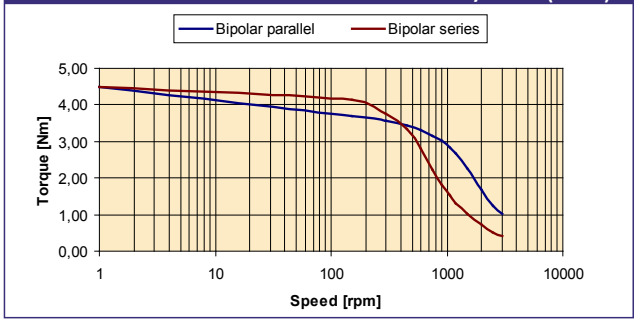
ML34FN31060x8K

Voltage 110 Vdc
Current 8.4 A/Phase (parallel)
4.2 A/Phase (series)



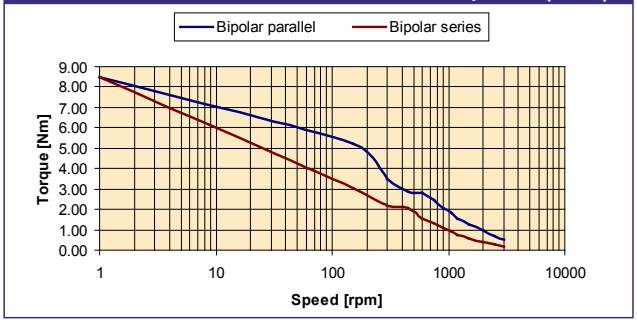
MT34FN31067M801

Voltage 110 Vdc
Current 9.4 A/Phase (parallel)
4.7 A/Phase (series)



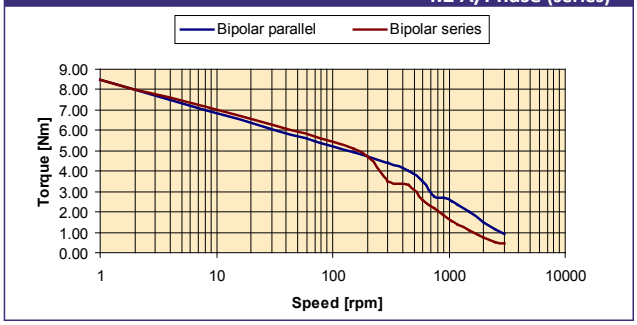
ML34FN47035M8K

Voltage 110 Vdc
Current 5.0 A/Phase (parallel)
2.5 A/Phase (series)



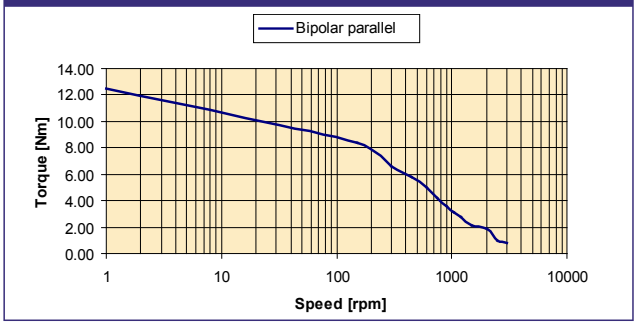
Mx34FN47060x8xx

Voltage 110 Vdc
Current 8.4 A/Phase (parallel)
4.2 A/Phase (series)



ML34FN62060M8K

Voltage 140 Vdc
Current 8.5 A/Phase (parallel)



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT34FV / 1,8°

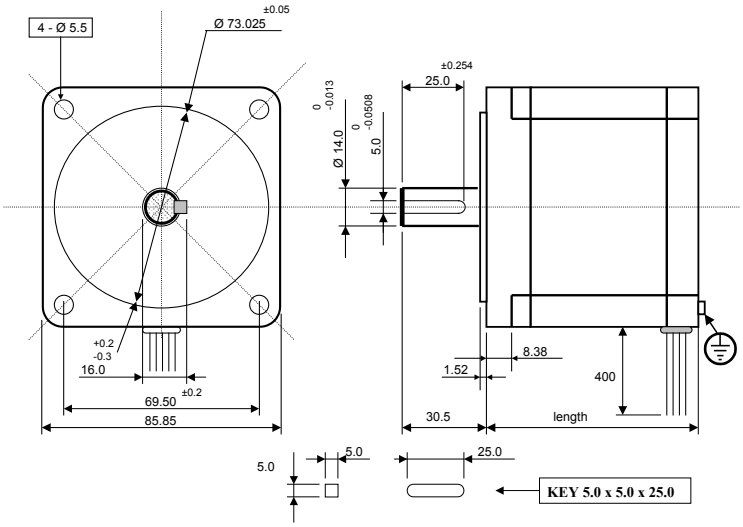
• General characteristics

Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	2000Vac 1 minute
Insulation class	F, 140° C
Protection	IP30 (IP54 and IP65 on request)
Magnetic material	low loss and high efficiency
Max radial force	220 N
Max axial force	60 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

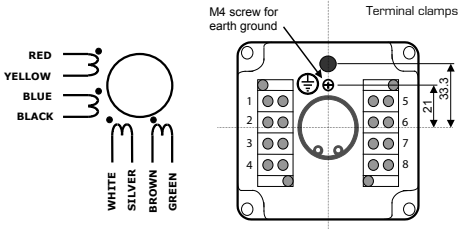
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT34FV26042M8K	2.39	4.20	0.57	1.70	3.40	––	1000	8	65.0	1.70	––
MT34FV31042M8K	3.36	4.20	0.80	4.00	4.50	––	1400	8	80.0	2.30	––
MT34FV31042M801	3.36	4.20	0.80	4.00	4.50	––	1400	8	114.0	2.30	terminal clamps CMA= 85,85 mm and CMP=34,0 mm + Protection IP65
MT34FV47042M8K	4.32	4.20	1.03	6.80	8.50	––	2700	8	118.0	3.80	––
MT34FV47042M802	4.32	4.20	1.03	6.80	8.50	––	2700	8	152.0	3.80	terminal clamps CMA= 85,85 mm and CMP=34,0 mm
MT34FV47042B8K	4.32	4.20	1.03	6.80	8.50	––	2700	8	118.0	3.80	double shaft 17.5 mm and Ø 6.35 mm
MT34FV62042M8K	6.13	4.20	1.46	8.68	12.0	––	4000	8	156.0	5.30	––

• Dimensions (Unit: mm)



• Wiring diagrams

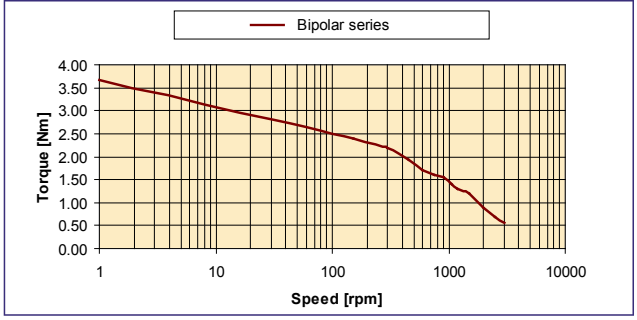


PIN No.	1	2	3	4	5	6	7	8
LEAD COLOR	RED	BLUE	YELLOW	BLACK	WHITE	BROWN	SILVER	GREEN

• Torque curves

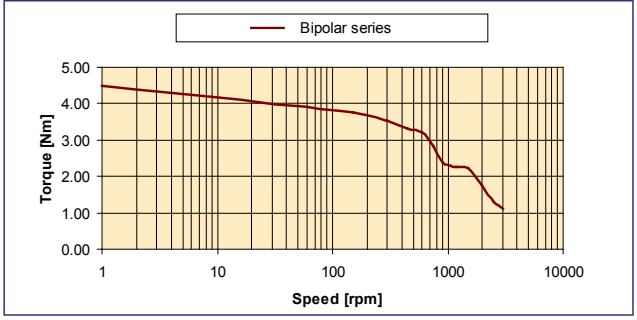
MT34FV26042M8K

Voltage 324 Vdc
Current 3.0 A/Phase (series)



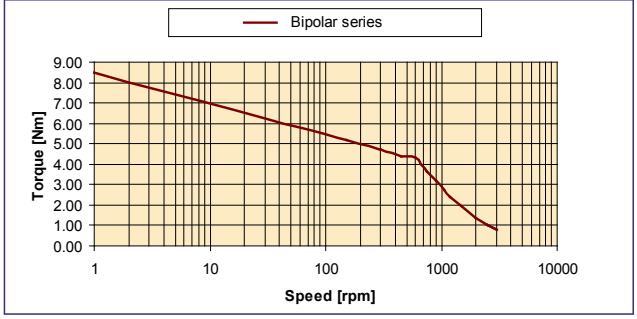
MT34FV31042x8xx

Voltage 324 Vdc
Current 3.0 A/Phase (series)



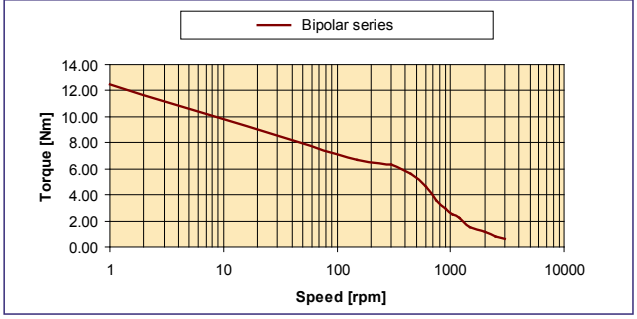
MT34FV47042M8xx

Voltage 324 Vdc
Current 3.0 A/Phase (series)



MT34FV62042M8K

Voltage 324 Vdc
Current 3.0 A/Phase (series)



MT34FH / 1,8°

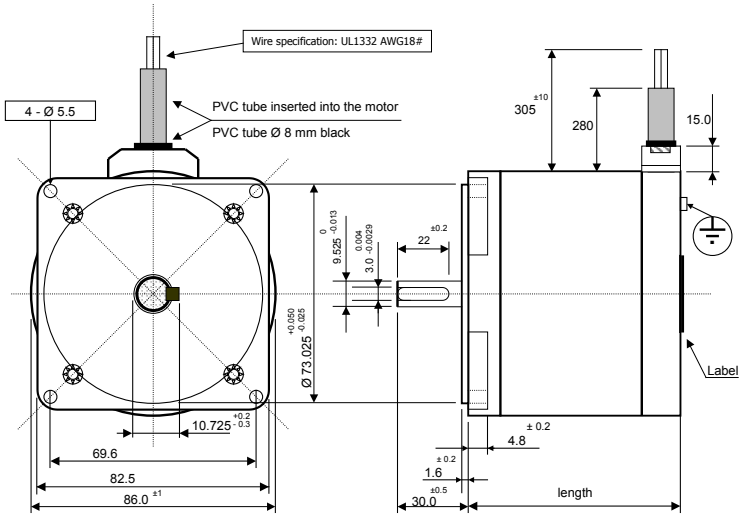
• General characteristics

Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	1500Vac 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	220 N
Max axial force	60 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

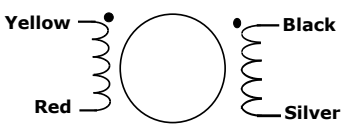
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT34FH38066M4K1	2.31	6.60	0.35	3.20	4.80	0.13	1200	4	93.7	2.40	––
MT34FH51090M401	3.82	9.00	0.425	3.50	7.60	0.23	1800	4	125.0	3.60	no key on front shaft and M4 hole with D–cut DML=25,0mm and DMP=8,5mm – wires length 1000 mm

• Dimensions (Unit: mm)



• Wiring diagrams

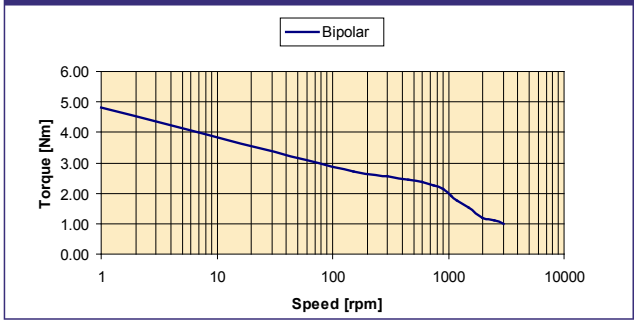


PHASE	A	A/	B	B/
LEAD COLOR	YELLOW	RED	BLACK	SILVER

• Torque curves

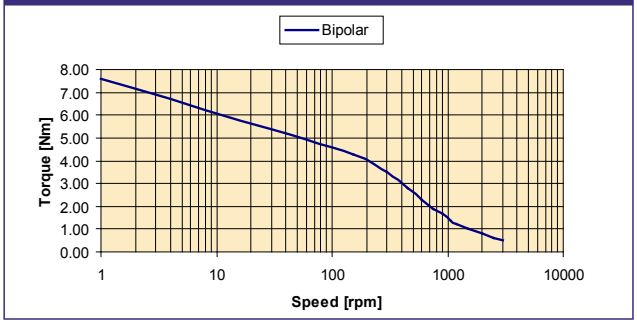
MT34FH38066M4K1

Voltage 110 Vdc
Current 6.6 A/Phase



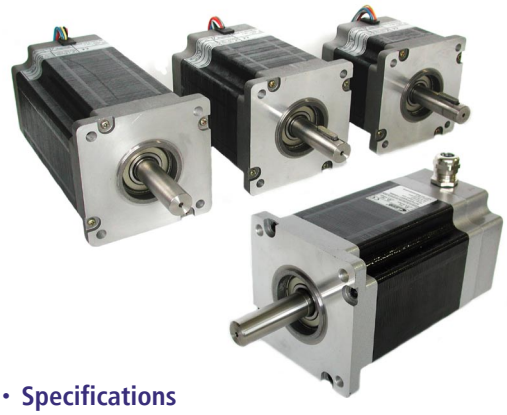
MT34FH51090M401

Voltage 110 Vdc
Current 9.0 A/Phase



Mx42FN / 1,8°

• General characteristics

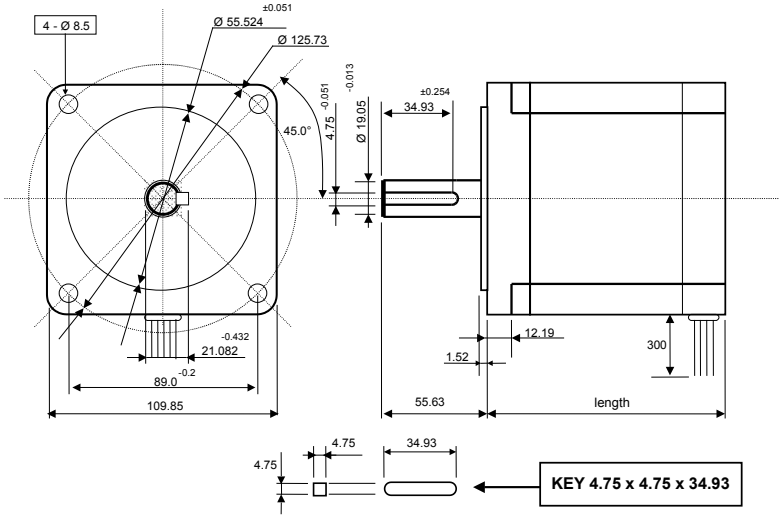


Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	1800Vac 1s 5mA
Insulation class	B, 120° C
Protection	IP30 (IP54 and IP65 on request)
Max radial force	220 N
Max axial force	60 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

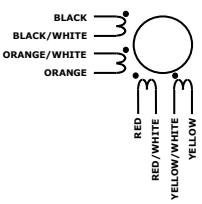
• Specifications

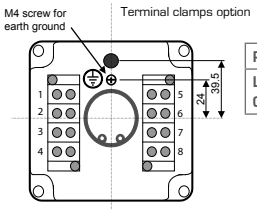
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
ML42FN39075M8K	2.70	7.50	0.36	3.00	11.50	0.30	5500	8	99.0	5.00	––
ML42FN39100M8K	2.50	10.00	0.25	1.90	11.50	0.30	5500	8	99.0	5.00	––
MT42FN59110M8LX	3.08	11.00	0.28	3.20	22.00	0.84	10900	8	184.0	8.40	front shaft Ø 15.87 with standard key and terminal clamps CMA= 109.86 mm and CMP= 30.0 mm
ML42FN59110M8K	3.08	11.00	0.28	3.20	22.00	0.84	10900	8	150.0	8.40	––
ML42FN59110B8K	3.08	11.00	0.28	3.20	22.00	0.84	10900	8	150.0	8.40	double shaft 17.5 mm and Ø 6.35 mm
ML42FN79070M8K	6.58	7.00	0.94	9.45	28.00	1.17	16200	8	201.0	11.70	––
ML42FN79110M8K	4.84	11.00	0.44	4.20	30.00	1.17	16200	8	201.0	11.70	––

• Dimensions (Unit: mm)



• Wiring diagrams



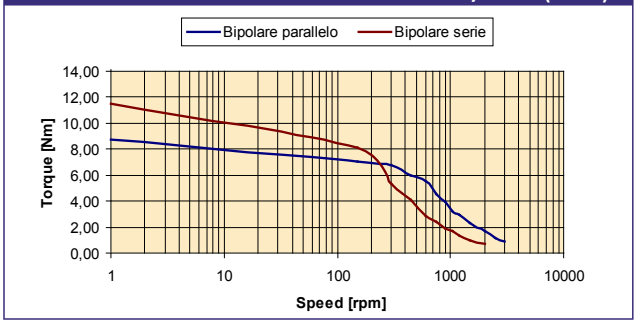


PIN No.	1	2	3	4	5	6	7	8
LEAD COLOR	BLACK	ORANGE WHITE	BLACK WHITE	ORANGE	RED	YELLOW WHITE	RED WHITE	YELLOW

- **Torque curves**

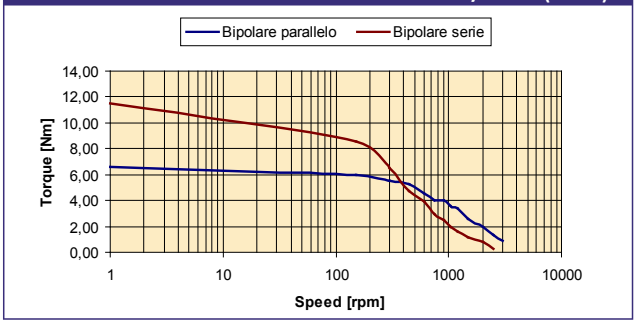
ML42FN39075M8K

Voltage 110 Vdc
Current 8.0 A/Phase (parallel)
5.3 A/Phase (series)



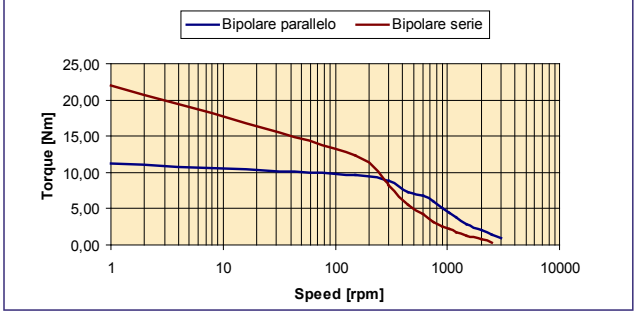
ML42FN39100M8K

Voltage 110 Vdc
Current 8.0 A/Phase (parallel)
7.1 A/Phase (series)



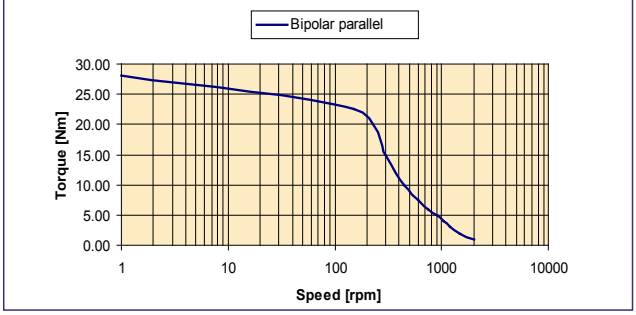
Mx42FN59110x8xx

Voltage 110 Vdc
Current 8.0 A/Phase (parallel)
8.0 A/Phase (series)



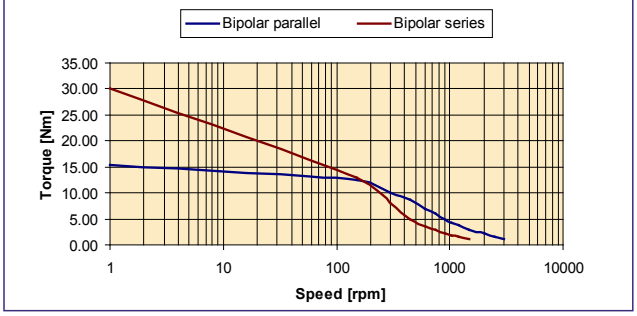
ML42FN79070M8K

Voltage 110 Vdc
Current 8.0 A/Phase (parallel)



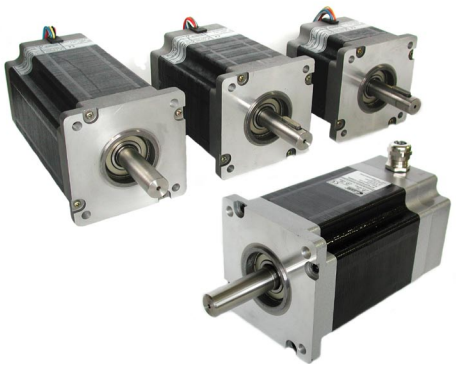
ML42FN79110M8K

Voltage 110 Vdc
Current 8.0 A/Phase (parallel)
8.0 A/Phase (series)



MT42FV / 1,8°

• General characteristics



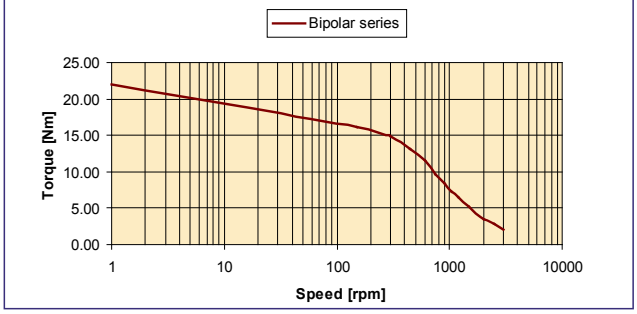
Step accuracy	±5%
Temperature rise	80° C max @ nominal current
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	2000Vac 1 minute
Insulation class	F, 140° C
Protection	IP30 (IP54 and IP65 on request)
Magnetic material	low loss and high efficiency
Max radial force	220 N
Max axial force	60 N
Shaft radial play	0.02 max 450 g. load
Shaft axial play	0.08 max 450 g. load

• Specifications

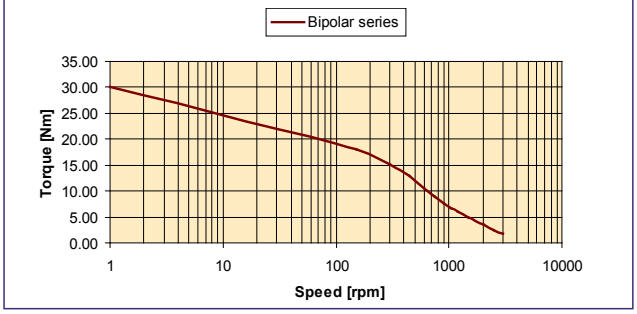
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT42FV59075M8K	4.35	7.50	0.58	6.60	22.00	0.84	10900	8	150.0	8.40	––
MT42FV79110M8K	4.84	11.00	0.44	4.20	30.00	1.17	16200	8	201.0	11.70	––

• Torque curves

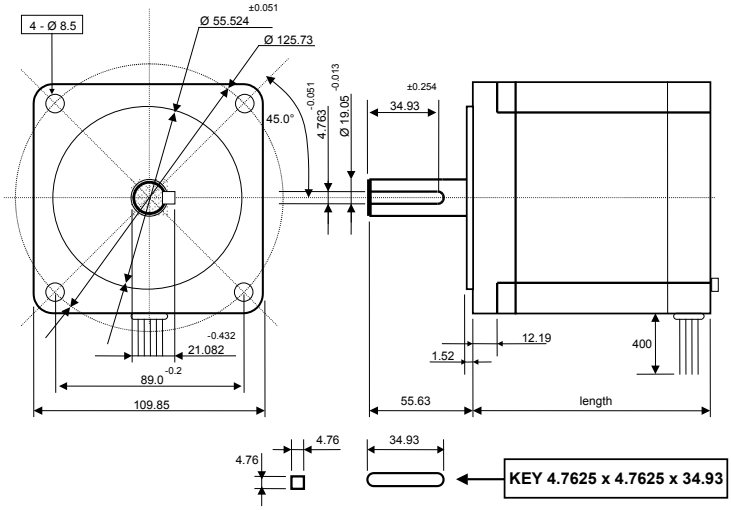
MT42FV59075M8K — Voltage 324 Vdc, Current 5.3 A/Phase (series)



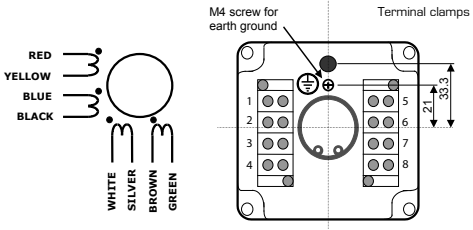
MT42FV79110M8K — Voltage 324 Vdc, Current 8.0 A/Phase (series)



• Dimensions (Unit: mm)



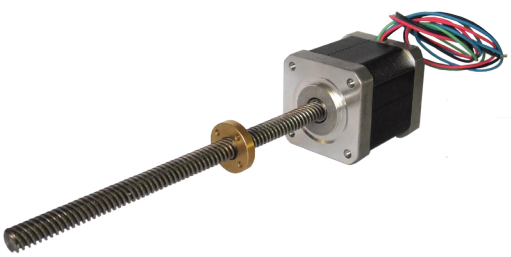
• Wiring diagrams



PIN No.	1	2	3	4	5	6	7	8
LEAD COLOR	RED	BLUE	YELLOW	BLACK	WHITE	BROWN	SILVER	GREEN

MT17HP / 1,8°

• General characteristics

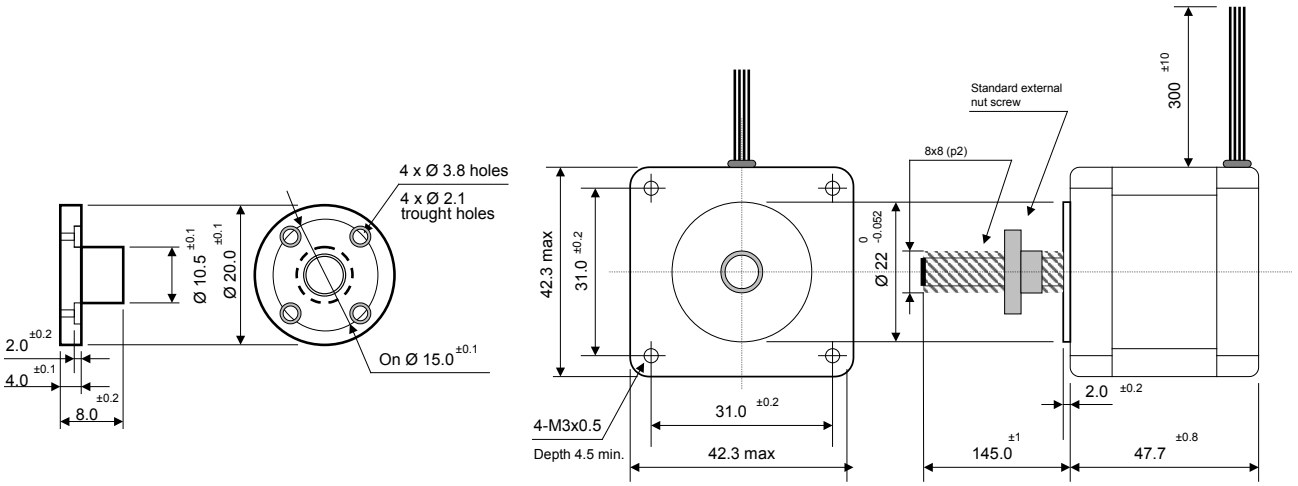


Step accuracy	±5%
Temperature rise	80° C max @ corrente nominale
Ambient temperature	-20° C ~ +50° C
Insulation resistance	100Mohm min.
Dielectric strength	500Vca 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial load	75 N
Max thrust load	15 N

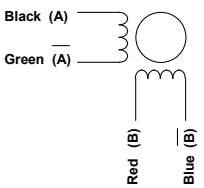
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT17HP18023M4A1	2.53	2.30	1.10	2.00	0.52	––	81	4	47.7	0.4	––

• Dimensions (Unit: mm)



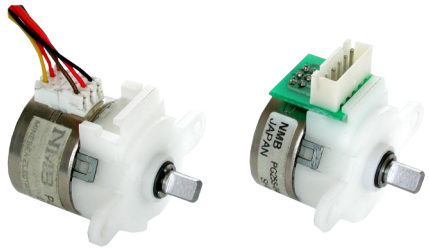
• Wiring diagrams



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT12AX / 0,495°

• General characteristics

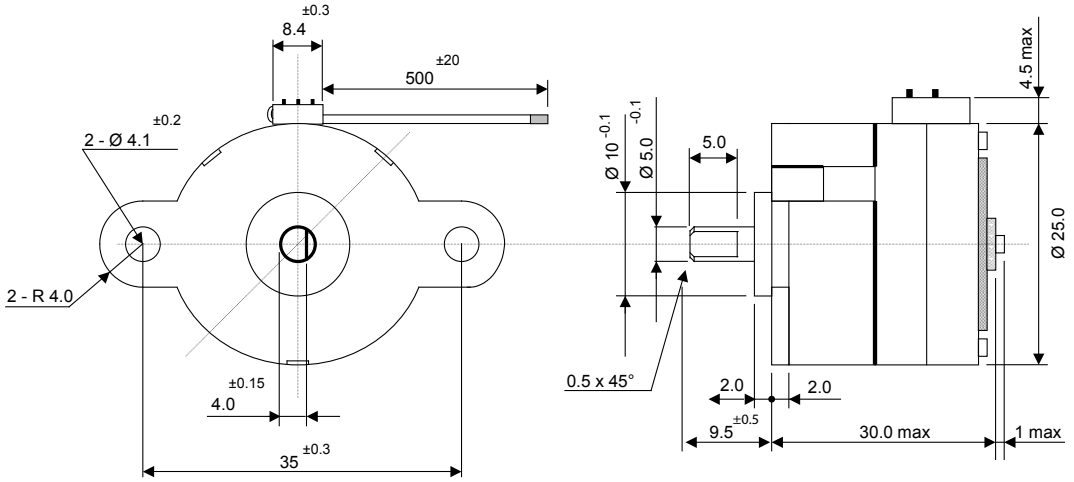


Reduction ratio	1 : 30,3
Storage temperature	-30° C ~ +80° C
Operative temperature	-10° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	E, 115° C
Protection	IP30

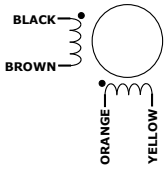
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT12AX10002M401	12.0	0.20	38.00	45.00	0.020	––	1.00	4	30.0	0.10	––

• Dimensions (Unit: mm)



• Wiring diagrams



LEAD COLOR	BLACK	BROWN	ORANGE	YELLOW
PHASE	A	A/	B	B/

MT14FJ / 7.5°

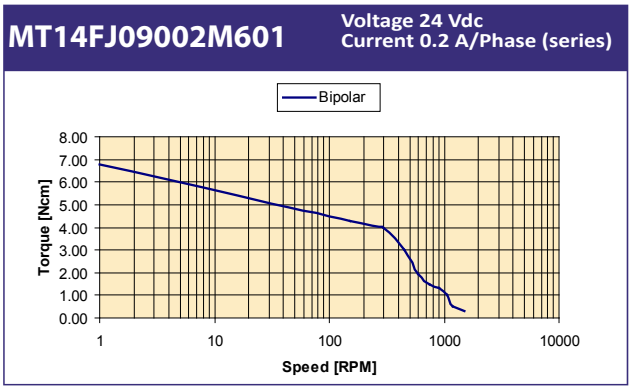
• General characteristics

Step accuracy	±7%
Storage temperature	-20° C ~ +50° C
Operating temperature	-10° C ~ +40° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	650Vac per 2 Sec.
Insulation class	E, 115° C
Protection	IP30

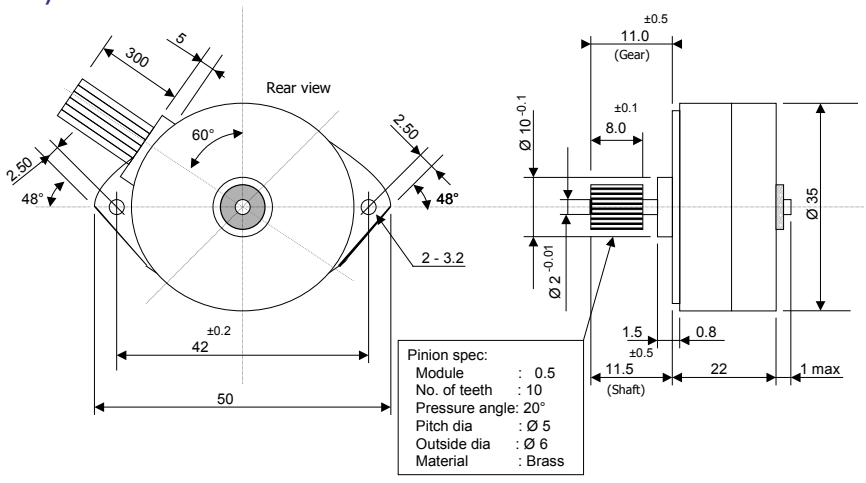
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT14FJ09002M601	24.0	0.30	80.00	46.00	0.068	0.012	7.50	6	22.0	0.08	--

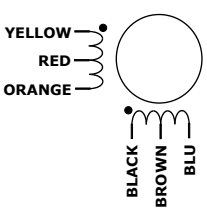
• Torque curves



• Dimensions (Unit: mm)



• Wiring diagrams



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT14AJ / 7.5°

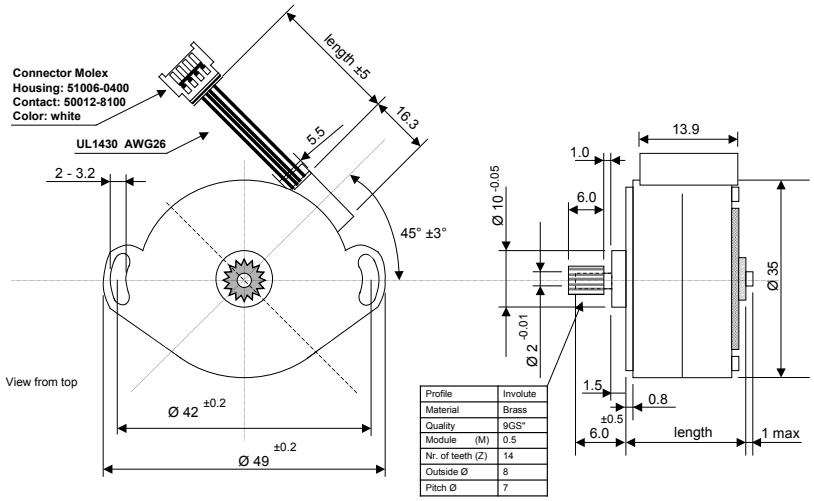
• General characteristics

Step accuracy	±5%
Storage temperature	-30° C ~ +80° C
Operating temperature	-10° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	E, 115° C
Protection	IP30

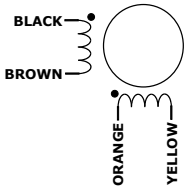
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT14AJ06005M402	3.75	0.50	7.50	7.50	0.037	0.003	2.8	4	15.5	0.05	special flange fixing + pinion on front shaft + customized connector with 50 mm length lead wires
MT14AJ06008M4	5.00	0.41	12.00	11.50	0.036	0.003	4.8	4	15.5	0.05	pinion on front shaft + tube on lead wires

• Dimensions (Unit: mm)



• Wiring diagrams

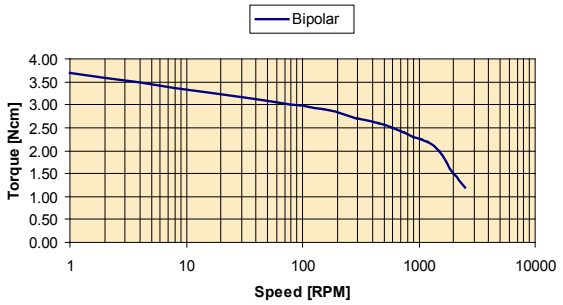


PHASE	A	A/	B	B/
LEAD COLOR	BLACK	BROWN	ORANGE	YELLOW

- Torque curves

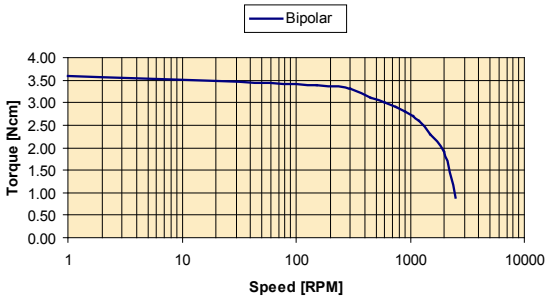
MT14AJ06005M402

Voltage 24 Vdc
Current 0.5 A/Phase



MT14AJ06008M4

Voltage 24 Vdc
Current 0.8 A/Phase



MT17AJ / 7.5°

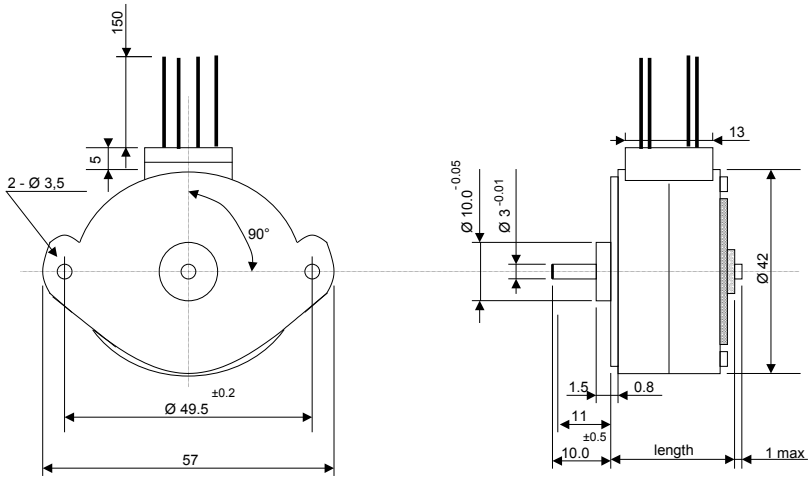
• General characteristics

Step accuracy	±5%
Storage temperature	-30° C ~ +80° C
Operating temperature	-10° C ~ +50° C
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500 Vac 1 minute
Insulation class	E, 115° C
Protection	IP30

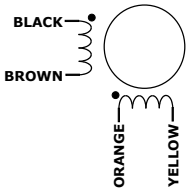
• Specifications

Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.4)
MT17AJ06003M401	37.00	0.31	20.00	18.50	0.037	0.007	10.3	4	15.5	0.09	pinion on front shaft + customized connector and 555 mm length lead wires
MT17AJ06003M601	12.00	0.34	35.00	16.00	0.056	0.006	7.3	6	15.5	0.09	––
MT17AJ09003M401	36.00	0.35	13.00	20.00	0.068	0.010	23.6	4	22.2	0.12	customized cable

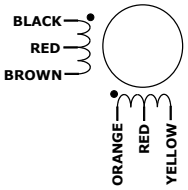
• Dimensions (Unit: mm)



• Wiring diagrams



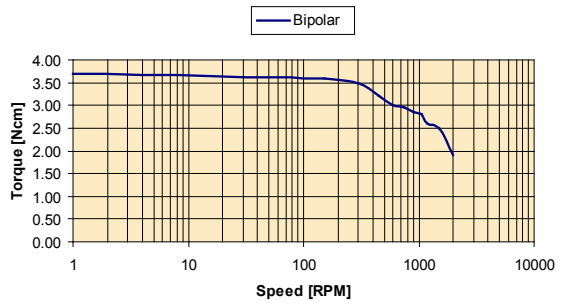
PHASE	A	A/	B	B/
LEAD COLOR	BLACK	BROWN	ORANGE	YELLOW



- Torque curves

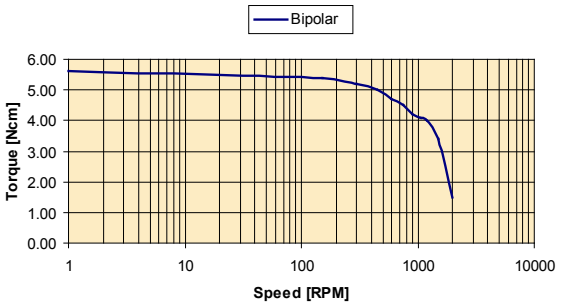
MT17AJ06003M401

Voltage 24 Vdc
Current 0.3 A/Phase



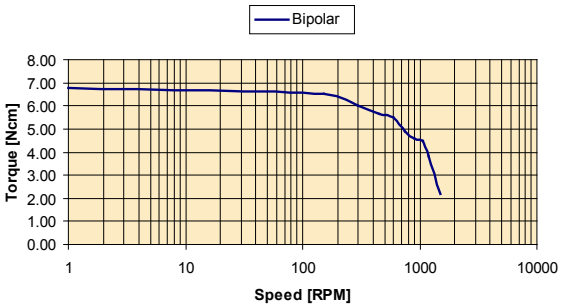
MT17AJ06003M601

Voltage 24 Vdc
Current 0.2 A/Phase (series)



MT17AJ09003M401

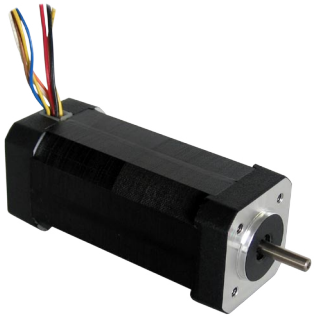
Voltage 24 Vdc
Current 0.3 A/Phase



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

MT17FB

• General characteristics

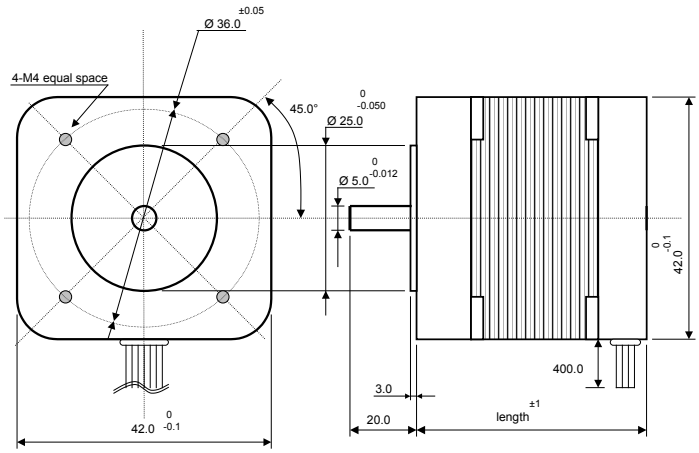


Winding type	Delta
Hall effect angle	120° electrical angle
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vdc 1 minute
Insulation class	B, 120° C
Protection	IP30
Max rafial force	75 N
Max axial force	15 N
Shaft run out	0,025 mm
Shaft radial play	0.025 max 460 g. load
Shaft axial play	0.025 max 400 g. load

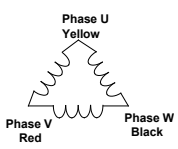
• Specifications

Model Code	Rated Voltage (Vdc)	Speed (rpm)	Poles Number	Phases Number	Torque (Nm)	Power (Watt)	Resistance (ohm)	Inductance (mH)	Torque Constant (Nm/A)	Back E.M.F. (Vrms/ Krpm)	Rotor Inertia (g.cm²)	Motor Length (mm)	Weight (Kg)
MT17FB17054M3	24.0	4000	8	3	0.075	26.0	1.80	2.60	0.035	3.66	24.0	41.0	0.30
MT17FB24106M3	24.0	4000	8	3	0.150	52.5	0.80	1.02	0.0355	3.72	48.0	61.0	0.45
MT17FB32155M3	24.0	4000	8	3	0.220	77.5	0.55	0.80	0.036	3.76	72.0	81.0	0.65
MT17FB40200M3	24.0	4000	8	3	0.300	105.0	0.28	0.54	0.0376	3.94	96.0	100.0	0.80

• Dimensions (Unit: mm)



• Wiring diagrams



Lead color	Yellow	Blue	Orange	Brown	White	Green	Red	Black
Wire type	UL1007 26AWG					UL1007 20AWG		
Function	Vdc	Hall A	Hall B	Hall C	GND	Phase U	Phase V	Phase W
Description	Voltage supply Hall sensor				Ground connection Hall sensor			

MT23FB

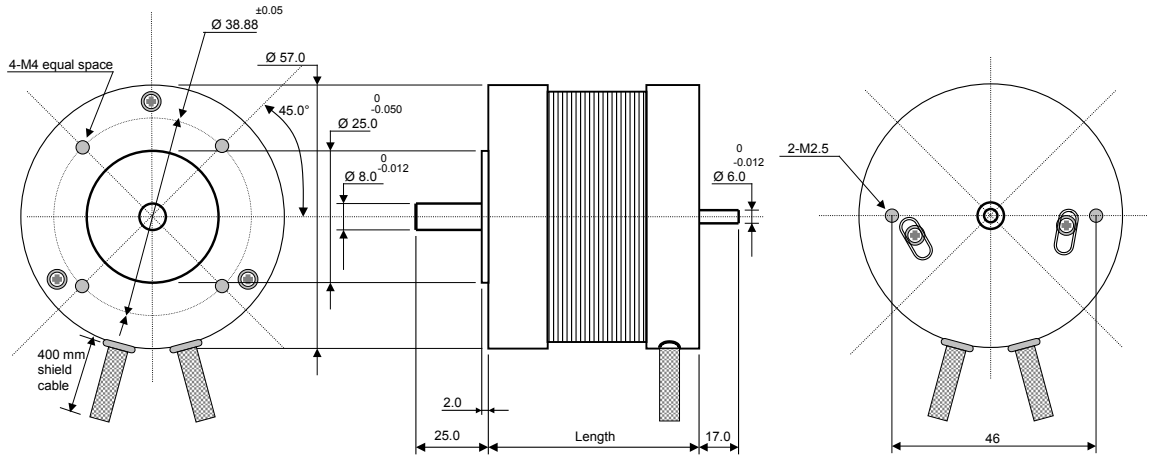
• General characteristics

Winding type	Delta
Hall effect angle	120° electrical angle
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vdc 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial play	75 N
Max axial play	15 N
Shaft run out	0,025 mm
Shaft radial play	0.025 max 460 g. load
Shaft axial play	0.025 max 400 g. load

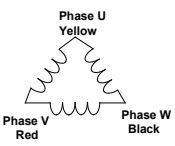
• Specifications

Model Code	Rated Voltage (Vdc)	Speed (rpm)	Poles Number	Phases Number	Torque (Nm)	Power (Watt)	Resistance (ohm)	Inductance (mH)	Torque Constant (Nm/A)	Back E.M.F. (Vrms/ Krpm)	Rotor Inertia (g.cm²)	Motor Length (mm)	Weight (Kg)
MT23FB22068M3	36.0	4000	4	3	0.110	46	1.50	4.20	0.063	6.60	75	55.0	0.50
MT23FB30115M3	36.0	4000	4	3	0.220	92	0.70	2.16	0.063	6.60	119	75.0	0.75
MT23FB37165B3	36.0	4000	4	3	0.320	133	0.45	1.40	0.063	6.60	173	95.0	1.00
MT23FB38165M3	36.0	4000	4	3	0.320	133	0.45	1.40	0.063	6.60	173	95.0	1.00
MT23FB45205B3	36.0	4000	4	3	0.430	180	0.35	1.00	0.063	6.60	230	115.0	1.25
MT23FB46205M3	36.0	4000	4	3	0.430	180	0.35	1.00	0.063	6.60	230	115.0	1.25

• Dimensions (Unit: mm)



• Wiring diagrams



Lead color	Yellow	Blue	Orange	Brown	White	Green	Red	Black
Wire type	UL1007 26AWG					UL1007 20AWG		
Function	Vdc	Hall A	Hall B	Hall C	GND	Phase U	Phase V	Phase W
Description	Voltage supply Hall sensor				Ground connection Hall sensor			

Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

LMED1

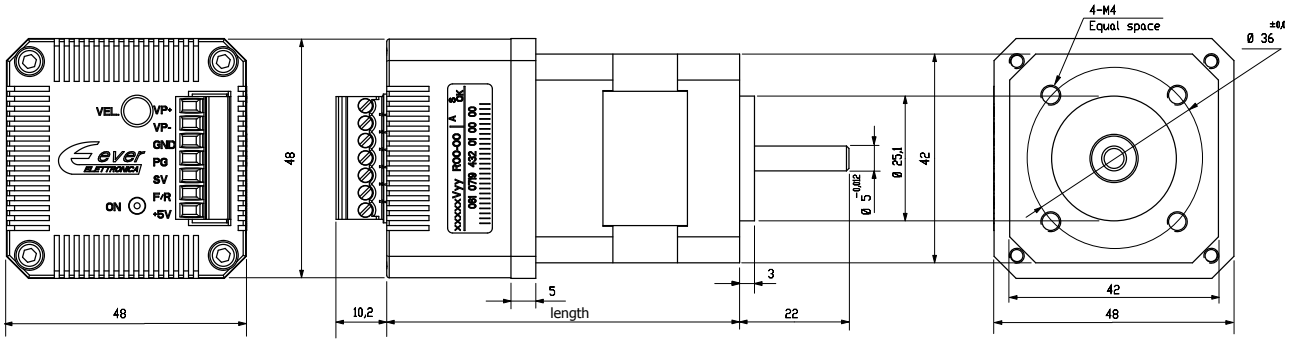
• General characteristics

Winding type	Delta
Hall effect angle	120° electrical angle
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vdc 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	28 N
Max axial force	10 N
Shaft radial play	0.020 max 460 g. load
Shaft axial play	0.025 max 400 g. load
Analog input	±5 Vcc
Output	speed pulse (TTL) 24 pulse/turn

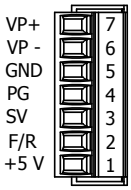
• Specifications

Model Code	Rated Voltage (Vdc)	Speed (rpm)	Poles Number	Phases Number	Torque (Nm)	Power (Watt)	Resistance (ohm)	Inductance (mH)	Torque Constant (Nm/A)	Back E.M.F. (Vrms/ Krpm)	Rotor Inertia (g.cm²)	Length (mm)	Weight (Kg)
LMED1B1	24.0	4000	8	3	0.062	26	1.75	2.10	0.034	2.78	24	71.0	0.90
LMED1C1	24.0	4000	8	3	0.125	52	0.80	1.20	0.035	2.90	48	91.0	1.05
LMED1D1	24.0	4000	8	3	0.185	78	0.46	0.70	0.038	3.10	72	111.0	1.25
LMED1E1	24.0	4000	8	3	0.250	104	0.28	0.54	0.037	3.07	96	130.0	1.40

• Dimensions (Unit: mm)



• Wiring diagrams



PIN No.	1	2	3	4	5	6	7
Signal	+5 V	F/R	SV	PG	GND	- Vp	+Vp
Description	5 Volt output	Rotation direction (High=CW)	Voltage/Speed reference 0÷5 Vdc	Output (TTL) speed reference 24 pulses/turn	System ground connection	Negative voltage power Input	Power voltage input +24 Vdc

LMED5

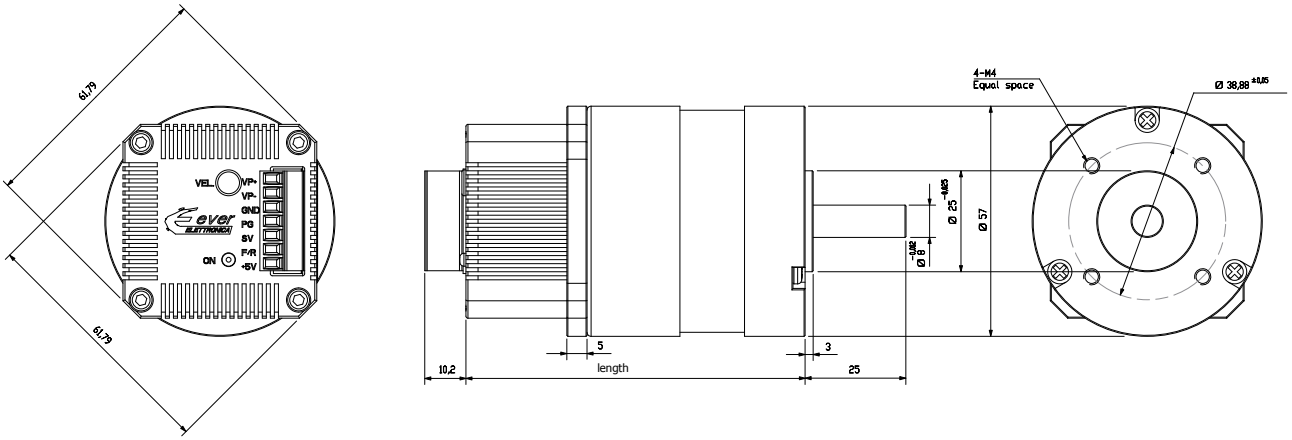
• General characteristics

Winding type	Delta
Hall effect angle	120° electrical angle
Insulation resistance	100Mohm min., 500Vdc.
Dielectric strength	500Vdc 1 minute
Insulation class	B, 120° C
Protection	IP30
Max radial force	75 N
Max axial force	15 N
Shaft radial play	0.025 max 460 g. load
Shaft axial play	0.025 max 400 g. load
Analog input	±5 Vdc
Output	speed pulse (TTL) 24 pulse/turn

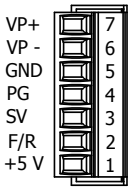
• Specifications

Model Code	Rated Voltage (Vdc)	Speed (rpm)	Poles Number	Phases Number	Torque (Nm)	Power (Watt)	Resistance (ohm)	Inductance (mH)	Torque Constant (Nm/A)	Back E.M.F. (Vrms/ Krpm)	Rotor Inertia (g.cm²)	Motor Length (mm)	Weight (Kg)
LMED5B1	36.0	4000	4	3	0.110	46	1.50	4.50	0.063	5.10	30	81.0	1.00
LMED5C1	36.0	4000	4	3	0.220	92	0.60	2.10	0.063	5.10	75	104.0	1.25
LMED5D1	36.0	4000	4	3	0.320	134	0.45	1.65	0.061	4.90	119	124.0	1.50
LMED5E1	36.0	4000	4	3	0.440	184	0.38	1.00	0.063	5.10	230	144.0	2.00

• Dimensions (Unit: mm)



• Wiring diagrams



PIN No.	1	2	3	4	5	6	7
Signal	+5 V	F/R	SV	PG	GND	- Vp	+Vp
Description	5 Volt output	Rotation direction (High=CW)	Voltage/Speed reference 0÷5 Vdc	Output (TTL) speed reference 24 pulses/turn	System ground connection	Negative voltage power input	Power voltage input +36 Vdc

Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm)
2-phases hybrid step motors NEMA 42 (110 mm) Linear actuator NEMA 17 (42 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

SE46

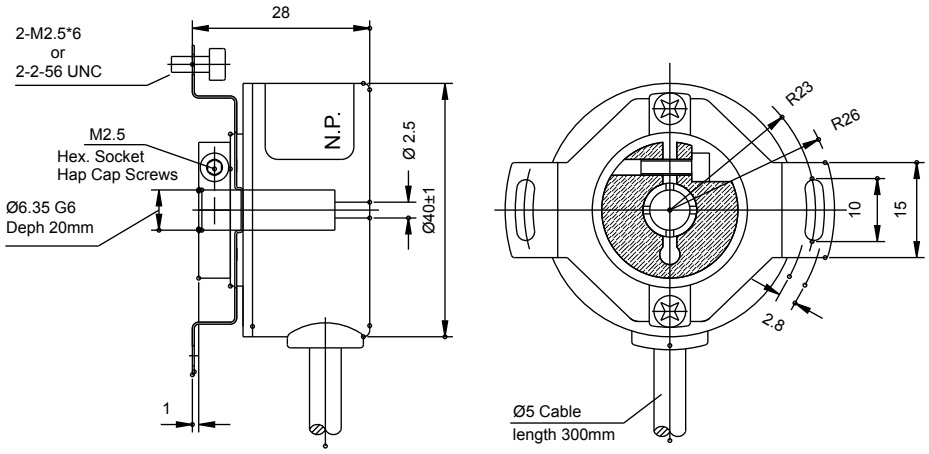
• General characteristics

Assembling method	2 screw (M2.5 or 2-56 UNC) Ø 46 mm
Input shaft	length 10~20 mm - Ø 6.35 mm G6
Operative temperature	-20° C ~ +100° C
Storage temperature	-20° C ~ +100° C
Protection	IP50
Axial load	10 N
Radial load	20 N
Max revolutions	6000 rpm
Feedback signals	A, A/, B, B/, Z, Z/
Phasing	90° electrical between A and B phases
Material body	Metal
Vibration resistance	100 m/s², 10...200Hz
Shock resistance	1000 m/s², 6ms
Connections	cable Ø5mm length 300mm

• Specifications

Model Code	Outputs	Power supply voltage (Vdc)	Maximal current (mA)	Output current (mA)	Output voltage (V)	Leading and falling edge (ms)	Resolution (ppr)	Maxmal output frequency (kHz)	Starting torque (Nm)	Weight (gr)
SE460400AA10030	Single ended 24 Vdc	10~30 ±10%	<150@VDD=24Vdc	±20	>2,5 (H) <0,5 (L)	<100	400	<100	$3x10^{-3}$	80
SE460400AB10030	Differential 5 Vdc	5 ±5%	<150@VDD=5Vdc	±20	>2,5 (H) <0,5 (L)	<100	400	<100	$3x10^{-3}$	80
SE461000AA10030	Single ended 24 Vdc	10~30 ±10%	<150@VDD=24Vdc	±20	>2,5 (H) <0,5 (L)	<100	1000	<100	$3x10^{-3}$	80
SE461000AB10030	Differential 5 Vdc	5 ±5%	<150@VDD=5Vdc	±20	>2,5 (H) <0,5 (L)	<100	1000	<100	$3x10^{-3}$	80
SE462000AA10030	Single ended 24 Vdc	10~30 ±10%	<150@VDD=24Vdc	±20	>2,5 (H) <0,5 (L)	<100	2000	<100	$3x10^{-3}$	80
SE462000AB10030	Differential 5 Vdc	5 ±5%	<150@VDD=5Vdc	±20	>2,5 (H) <0,5 (L)	<100	2000	<100	$3x10^{-3}$	80

• Dimensions (Unit: mm)



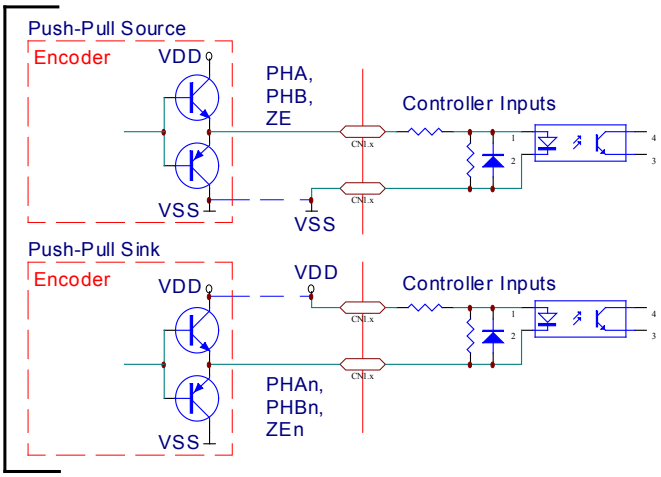
• Wires output

Single ended 24 Vdc	Lead color	White	Black	Red	Green	Yellow	(Shield)
	Connection	VDC	0V	A	B	Z	G
	Description	Power supply (+)	Power supply (-)	Output phase A	Output phase B	Output phase Z	Cable shield

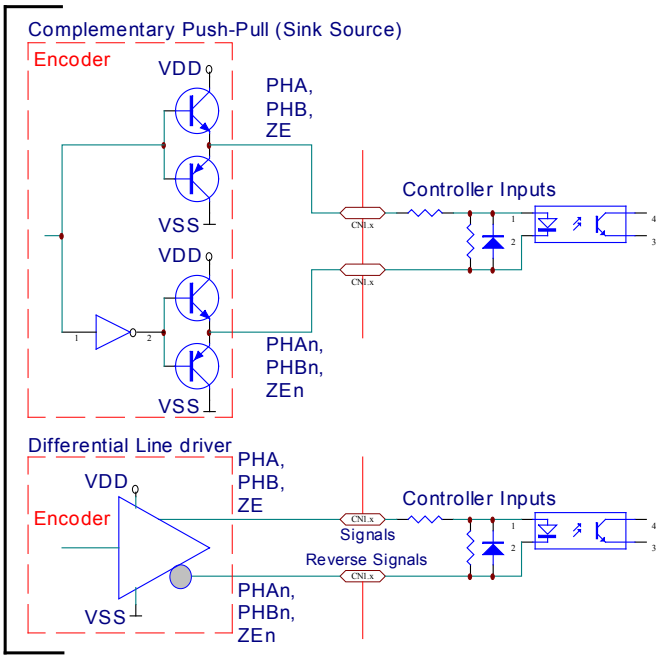
Differential 5 Vdc	Lead color	White	Black	Red	Pink	Green	Blue	Yellow	Orange	(Shield)
	Connection	VDC	0V	A	A/	B	B/	Z	Z/	G
	Description	Power supply (+)	Power supply (-)	Non-inverting output phase A	Inverting output phase A	Non-inverting output phase B	Inverting output phase B	Non-inverting output phase Z	Inverting output phase Z	Cable shield

• Output circuity

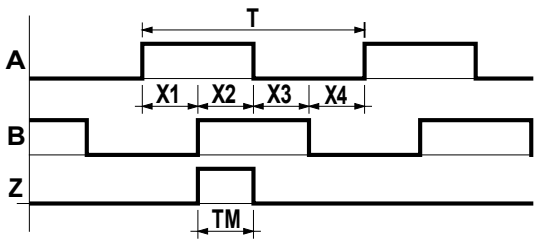
Single ended connection



Differential connection



• Waveforms



The waveforms viewed from the coupled plate and clockwise rotation

Waveforms Ratio :	X1 + X2 = 0.5T ± 0.1T
	X2 + X3 = 0.5T ± 0.1T
Phase Shift :	Xn > 0.15T (n=1,2,3,4)
Zero Signal Width :	TM = 0.25T

RR17TE42

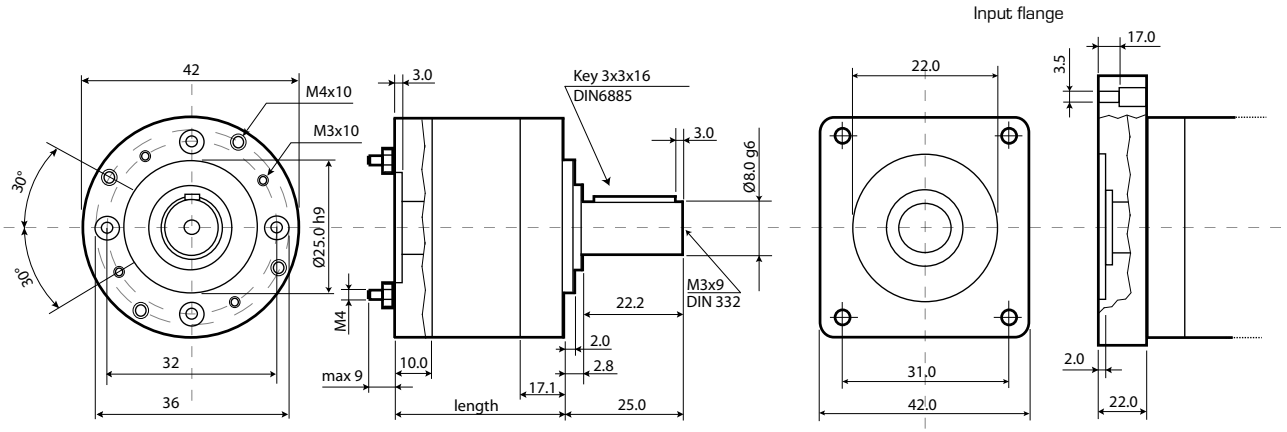
• General characteristics

Lubrication	**grease (life-time lubrication)**
Rotation direction	**same for input and output shaft**
Operating temperature	**-30° C ~ +140° C**
Input flange	**NEMA 17**
Input shaft	**A = Ø5.00 mm**

• Specifications

Model Code *xxx = ordering code* *X = input shaft diameter code*	*Stages number*	*Ordering code*	*Reduction ratio*	*Moment of inertia referred to input shaft* *(g.cm²)*	*Max backlash* *(°)*	*Output torque* *(Nm)*	*Efficiency*	*Max radial load* *(N)*	*Max axial load* *(N)*	*Length* *(mm)*	*Weight* *(Kg)*
RR17TE421xxxX	1	4 5 7	3.70 5.18 6.75	4.68 3.08 2.35	0.90	3.00	0.80	160	50	49.0	0.40
RR17TE422xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	4.41 3.59 3.58 2.93 2.92 2.26 2.91 2.25 2.25 2.25	0.95	7.50	0.75	230	80	62.0	0.50
RR17TE423xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	4.41 3.59 3.58 2.93 3.58 2.26 2.92 2.91 2.25 2.91 2.25 2.25 2.91 2.25 2.25 2.25 2.25 2.25 2.25	1.00	15.00	0.70	300	110	75.0	0.60

• Dimensions (Unit: mm)



RR23TE42

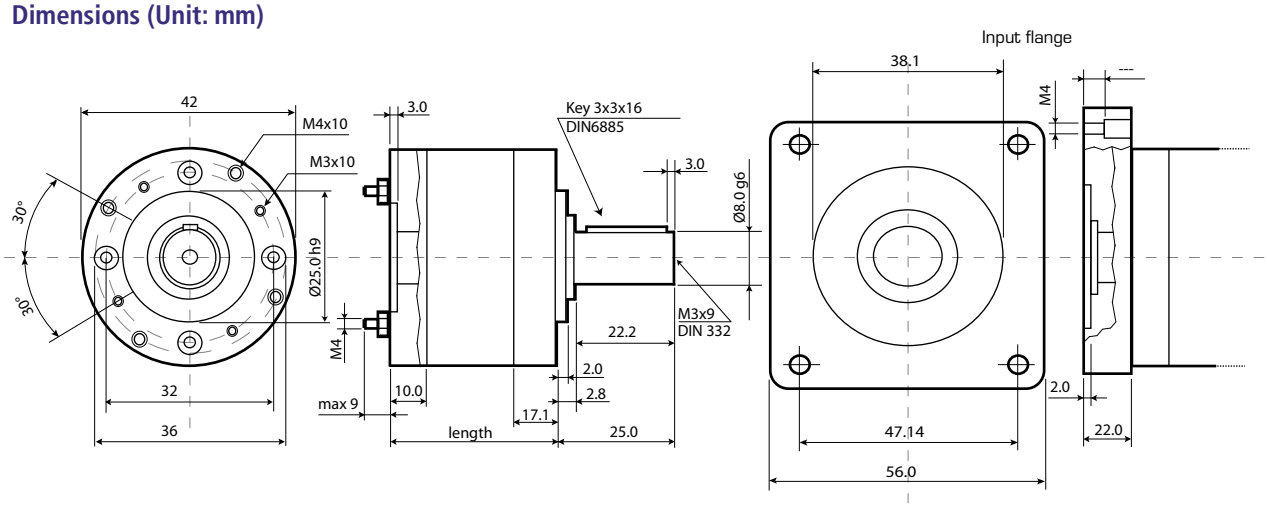
• General characteristics

Lubrication	**grease (life-time lubrication)**
Rotation direction	**same for input and output shaft**
Operating temperature	**-30° C ~ +140° C**
Input flange	**NEMA 23 / NEMA 24**
Input shaft	**B = Ø6.35 mm or G = Ø8.00 mm**

• Specifications

Model Code *xxx = ordering code* *X = input shaft diameter code*	*Stages number*	*Ordering code*	*Reduction ratio*	*Moment of inertia referred to input shaft* *(g.cm²)*	*Max backlash* *(°)*	*Output torque* *(Nm)*	*Efficiency*	*Max radial load* *(N)*	*Max axial load* *(N)*	*Length* *(mm)*	*Weight* *(Kg)*
RR23TE421xxxX	1	4 5 7	3.70 5.18 6.75	4.68 3.08 2.35	0.90	3.00	0.80	160	50	49.0	0.40
RR23TE422xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	4.41 3.59 3.58 2.93 2.92 2.26 2.91 2.25 2.25 2.25	0.95	7.50	0.75	230	80	62.0	0.50
RR23TE423xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	4.41 3.59 3.58 2.93 3.58 2.26 2.92 2.91 2.25 2.91 2.25 2.25 2.91 2.25 2.25 2.25 2.25 2.25 2.25	1.00	15.00	0.70	300	110	75.0	0.60

• Dimensions (Unit: mm)



RR23TE52

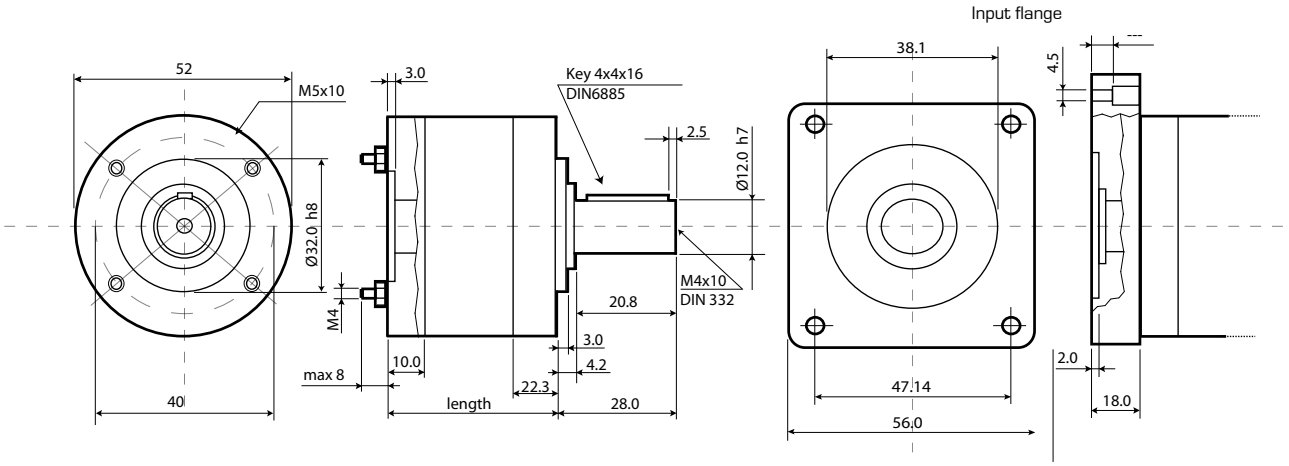
• General characteristics

Lubrication	**grease (life-time lubrication)**
Rotation direction	**same for input and output shaft**
Operating temperature	**-30° C ~ +140° C**
Input flange	**NEMA 23 / NEMA 24**
Input shaft	**B = Ø6.35 mm or G = Ø8.00 mm**

• Specifications

Model Code xxx = ordering code X = input shaft diameter code	*Stages number*	*Ordering code*	*Reduction ratio*	*Moment of inertia referred to input shaft (g.cm²)*	*Max backlash (°)*	*Output torque (Nm)*	*Efficiency*	*Max radial load (N)*	*Max axial load (N)*	*Length (mm)*	*Weight (Kg)*
RR23TE521xxxX	1	4 5 7	3.70 5.18 6.75	18.35 15.36 12.33 11.32	0.70	4.00	0.80	200	60	56.0	0.70
RR23TE522xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	17.11 14.41 14.36 11.66 11.63 9.50 11.61 9.48 9.47 9.47	0.75	12.00	0.75	320	100	70.0	0.90
RR23TE523xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	17.11 14.11 14.36 11.66 14.36 11.61 14.36 11.61 9.48 11.61 9.48 9.47 11.61 9.47 9.47 9.47 9.47 9.47 9.47	0.80	25.00	0.70	450	150	84.0	1.10

• Dimensions (Unit: mm)



RR23TE62

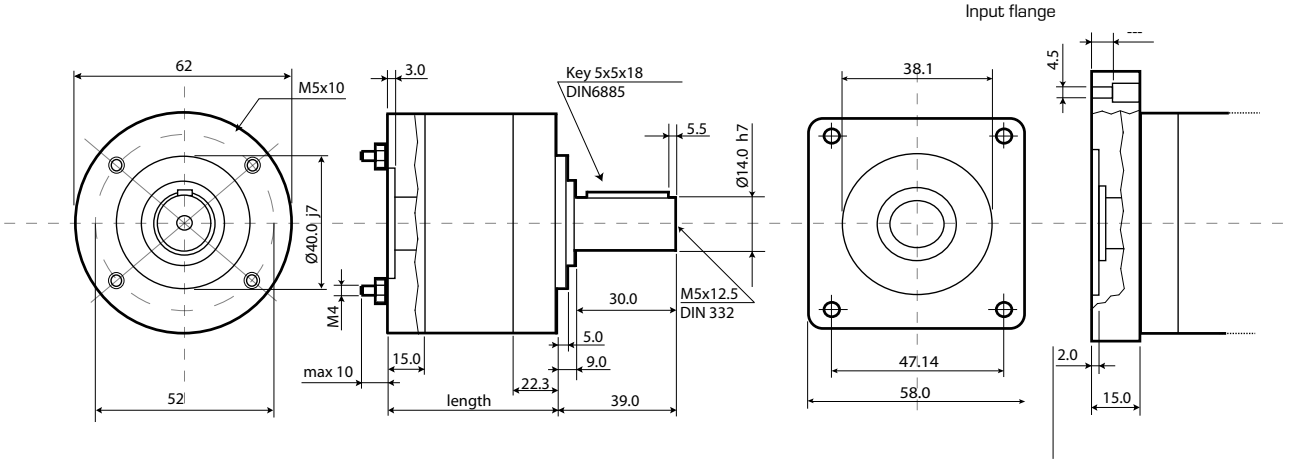
• General characteristics

Lubrication	grease (life-time lubrication)
Rotation direction	same for input and output shaft
Operating temperature	-30° C ~ +140° C
Input flange	NEMA 23 / NEMA 24
Input shaft	B = Ø6.35 mm or G = Ø8.00 mm

• Specifications

Model Code xxx = ordering code X = input shaft diameter code	Stages number	Ordering code	Reduction ratio	Moment of inertia referred to input shaft (g.cm²)	Max backlash (°)	Output torque (Nm)	Efficiency	Max radial load (N)	Max axial load (N)	Length (mm)	Weight (Kg)
RR23TE621xxxX	1	4 5 7	3.70 5.18 6.75	37 23 17	0.65	8.00	0.80	240	50	61.0	0.80
RR23TE622xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	35 28 28 22 22 17 22 17 17 17	0.70	25.00	0.75	360	70	77.0	1.20
RR23TE623xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	35 28 28 21 28 16 22 22 17 22 17 17 22 17 17 17 17 17 17	0.75	50.00	0.70	520	120	93.0	1.60

• Dimensions (Unit: mm)



Quality of motors, coding table and usage
2-phases hybrid step motors NEMA 10 (25 mm)
2-phases hybrid step motors NEMA 12 (28 mm) NEMA 14 (35 mm)
2-phases hybrid step motors NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 23 (57 mm)
2-phases hybrid step motors NEMA 24 (60 mm)
2-phases hybrid step motors NEMA 34 (86 mm) Linear actuator NEMA 17 (42 mm)
2-phases hybrid step motors NEMA 42 (110 mm)
2-phases permanent magnet step motors NEMA 12 (25 mm) NEMA 14 (35 mm)
2-phases permanent magnet step motors NEMA 17 (42 mm)
DC brushless motors NEMA 17 (42 mm) NEMA 23 (57 mm)
DC brushless motors with integrated driver NEMA 17 (42 mm) NEMA 23 (57 mm)
Encoders
Planetary gearboxes
Company and contacts

RR34TE62

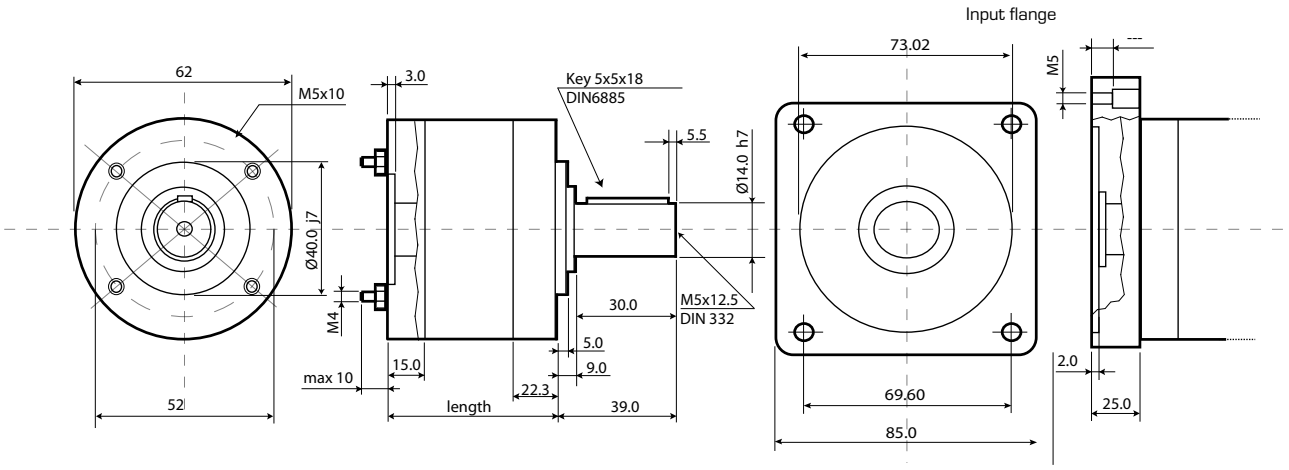
• General characteristics

Lubrication	**grease (life-time lubrication)**
Rotation direction	**same for input and output shaft**
Operating temperature	**-30° C ~ +140° C**
Input flange	**NEMA 34**
Input shaft	**C = Ø9.52 mm or E = Ø12.00 mm or D = Ø12.70 mm**

• Specifications

Model Code xxx = ordering code X = input shaft diameter code	*Stages number*	*Ordering code*	*Reduction ratio*	*Moment of inertia referred to input shaft (g.cm²)*	*Max backlash (°)*	*Output torque (Nm)*	*Efficiency*	*Max radial load (N)*	*Max axial load (N)*	*Length (mm)*	*Weight (Kg)*
RR34TE621xxxX	1	4 5 7	3.70 5.18 6.75	37 23 17	0.65	8.00	0.80	240	50	61.0	0.80
RR34TE622xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	35 28 28 22 22 17 22 17 17 17	0.70	25.00	0.75	360	70	77.0	1.20
RR34TE623xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	35 28 28 21 28 16 22 22 17 22 17 17 22 17 17 17 17 17 17	0.75	50.00	0.70	520	120	93.0	1.60

• Dimensions (Unit: mm)



RR34TE81

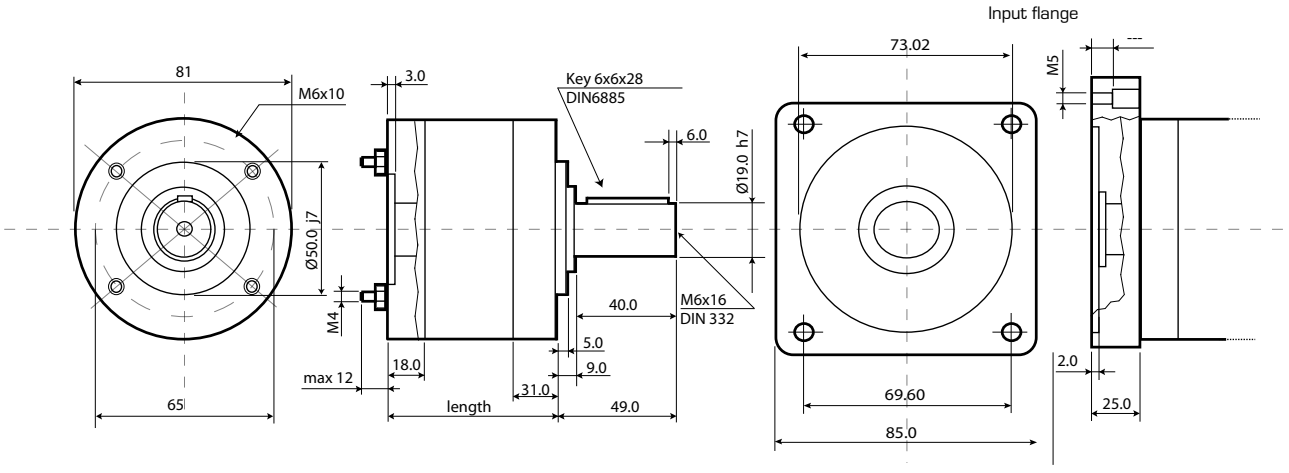
• General characteristics

Lubrication	**grease (life-time lubrication)**
Rotation direction	**same for input and output shaft**
Operating temperature	**-30° C ~ +140° C**
Input flange	**NEMA 34**
Input shaft	**C = Ø9.52 mm or E = Ø12.00 mm or D = Ø12.70 mm**

• Specifications

Model Code *xxx = ordering code* *X = input shaft diameter code*	*Stages number*	*Ordering code*	*Reduction ratio*	*Moment of inertia referred to input shaft* *(g.cm²)*	*Max backlash* *(°)*	*Output torque* *(Nm)*	*Efficiency*	*Max radial load* *(N)*	*Max axial load* *(N)*	*Length* *(mm)*	*Weight* *(Kg)*
RR34TE811xxxX	1	4 5 7	3.70 5.18 675	165 109 91	0.50	20.00	0.80	400	80	77.0	1.80
RR34TE812xxxX	2	14 16 18 19 22 25 27 29 35 46	13.73 15.88 18.36 19.20 22.20 25.01 26.85 28.93 34.97 45.56	155 127 129 100 105 125 105 88 89 89	0.55	60.00	0.75	600	120	99.0	2.50
RR34TE813xxxX	3	51 59 68 71 79 93 95 100 107 115 124 130 139 150 169 181 195 236 308	50.89 58.85 68.06 71.16 78.71 92.70 95.17 99.50 107.20 115.07 123.97 129.62 139.13 149.90 168.84 181.24 195.26 236.09 307.54	154 128 127 104 127 88 104 105 88 105 88 88 102 88 89 89 89 89 89	0.60	120.00	0.70	1000	200	121.0	3.20

• Dimensions (Unit: mm)



Our history

Our solutions make yours easy

1977 — Ever snc is founded with the philosophy of the handicraft care of the products to satisfy the requests of made in Italy drivers suitable for stepper motors produced by Sigma Instrument USA.

1982 — Ever snc signes an exclusive Distribution agreement for the Italian market with NMB (Minebea), the leader Japanese manufacturer of hybrid and permanent magnet step motors.

1983 — Ever Elettronica srl is established as marketing unit to improve the commercial network of the group.

1984 — Ever Group starts to cooperate, as supplier of complete motion control solutions based on stepper motors, with the leader manufacturers of textile looms, bobbin winding machines, fuel distributors, packaging machines, etc .

1985 — MPP02, first driver with internal oscillator and ramps self management through discrete control logic; even if "hardware controlled", the driver is easily configurable by the end user in order to free the PLC from speed profile management.

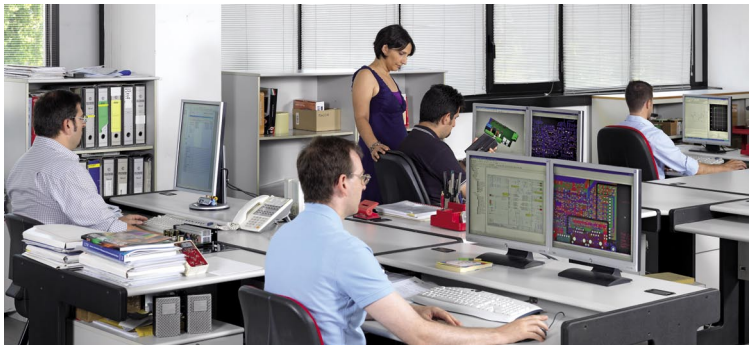
1986 — SMC, programmable driver based on Motorola 68HC11 microcontroller with PLC functionalities, is released to market. Ever snc is rewarded twice from the Milan Chamber of Commerce for its skills in innovation of digital drives with the integration of PLC functionality.

1989 — In June: a new site of 1.200 sq/mt for the company design, products testing and marketing departments is opened.

1991 — XPRESS, our hardware solutions are provided with an IDE: since the end of the 80's the user of Ever drivers can develop his own automation solutions.

1992 — SDHWA120, Ever Group Canbus drivers family, completed with a new series of high power drivers. From the middle of 90's till now, thousands of Ever Elettronica Canbus drivers have been installed all over the world.

1998 — Ever Elettronica srl joined Can in Automation "CIA" with "4Bh" vendor ID.



GWC: this master controller, featuring Canbus and Modbus interfaces, Profibus gateway, programmable with IEC1131 ST "TRIPOS" language, helps the integration of Canbus Ever drivers into complex machine control systems.

SDMWD170, for the first time in Italy is released a step motors drive with closed loop control of torque, speed and position.

2002

2003

2005

2007

2008

2012

2013

2015

TITANIO
VECTOR - STEPPER - DRIVES

Our new "state of the art" vector drives based on ARM C. M4 DSP technology.

"High Efficiency" motors. Our new HE hybrid stepper motors line with torque performances 40% higher than standard motors in standard sizes and at same price.

EtherCAT

1977 - 2012

35 years of activity anniversary is celebrated looking at the future with the registration to CIA ETG and with the first EtherCAT SW1 driver.

eePLC Studio

eePLC, visual programming environment for SW1 drivers with integrated PLC. This software, resulting from our 30-years experience in design of tailored solutions development, can work as unique and user friendly tool to allow our customers to develop themself complex applications for their machines based on our drives.

Changzhou Ever Electronics Motion Control Technology, chinese AIWEI, is set up as Ever Elettronica srl WOFE to give technical and commercial support to the customers of the Group in Asia market.

Ever Elettronica srl, according to the new manufacturing mission of the branch, sets in its new facility of 2.000 sq/mt in Lodi a SMD and THD components assembly line provided with products ICT and functionality ATE (automatic testing equipments). Our drivers are produced under our direct control; a strategic step forward allowing us to offer to our customers quality, flexibility and fast delivery.

"We were born with Italian electronics for industrial automation and we paced as a protagonist all the technology and global way from the 70's to our days, trying to support our customers not just as a components supplier but as a partner able to provide clever solutions to their automation problems".

Ing. Felice Caldi

EVER snc

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