HE Step motors

High Efficiency

2015

ever ELETTRONICA

the clever drive

Our history

Our solutions make yours easy

1977 — Ever snc has been 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 signed a sole agency Distribution agreement for the Italian market with NMB (Minebea), Japanese leader manufacturer of hybrid and permanent magnet stepper motors.

1983 — Ever Elettronica srl has been founded as marketing unit and to increase the commercial network of the group.

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

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 unload the PLC from speed profile management.

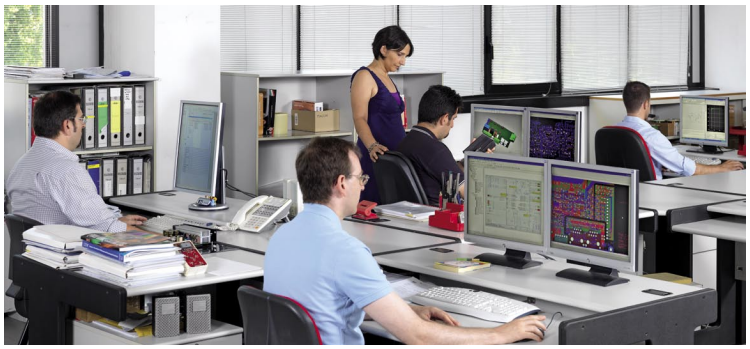
1986 — SMC, programmable driver based on Motorola 68HC11 microcontroller with PLC functionalities. Ever snc is rewarded twice from the Milan Chamber of Commerce for its innovation capacity in the introduction in Italy of digital driver with integrated PLC.

1989 — XPRESS, our hardware solutions have an IDE; since the end of the 80's the user of Ever drivers can develop himself his own automation solutions.

1991 — Opening in June of a new production site of 1.200 sq/mt for the designing and for the commercial office.

1992 — Ever Elettronica srl joined Can in Automation "CIA" with "4Bh" vendor ID.

1998 — 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.



GWC, master controller with 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 is launched in Italy a stepper driver with closed loop control of torque, speed and position.

2002

2003

2005

2007

2008

2012

2013

2015

TITANIO
VECTOR - STEPPER - DRIVES

Our new vectorial drivers based on DSP with ARM C.M4 technology.

"High Efficiency" motors, our new HE hybrid stepper motors range with torque performances 40% higher than standard motors with same sizes and same prices.

EtherCAT

35years 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, the result of our 30-years designing experience in the solutions' development, it's a unique tool very easy to use that allows our customers to develop themself complex applications for their machines.

Changzhou Ever Electronics Motion Control Technology, AIWEI in Chinese, has been set up by Ever Elettronica srl to give technical/commercial support to the customers of the Group in the asiatic market.

Ever Elettronica srl, according to the new manufacturing mission of the group, install in the new headquarter of 2.000 sq/mt in Lodi a SMD line, one for the traditional assembling and one for the ICT electronic and function testing. Our drivers are 100% produced under our direct control; this strategic choice allow us to offer to our customers quality, flexibility and fast delivery.

"We were born with the Italian electronic for industrial automation and we lived as protagonist all the technological and global way from the 70's to our days, trying to propose us to our customers not as simple components suppliers but as partner able to supply solutions for their automation problems".

Ing. Felice Caldi

The advantages to choose

Our solutions make yours easy

38 years
of experience
in this field

internal design,
development
and production

3 years
warranty

ever
ELETTRONICA
the clever drive

more than 300.000
stepper motors
sold every year

international
sales
network

we produce
thousands of drivers
every year

HE motors

Up to 40% higher torque than standard stepper motors with same winding and mechanical size

Optimized air gap and stator and rotor profiles in order to obtain a low mechanical torque ripple

Magnetic materials F class for high reliability and long stability

Up to IP65 protection class

High reliable bearings (NMB and NSK)

3 years warranty

Customization possibility also for small quantities

Coding table and combination

Our solutions make yours easy

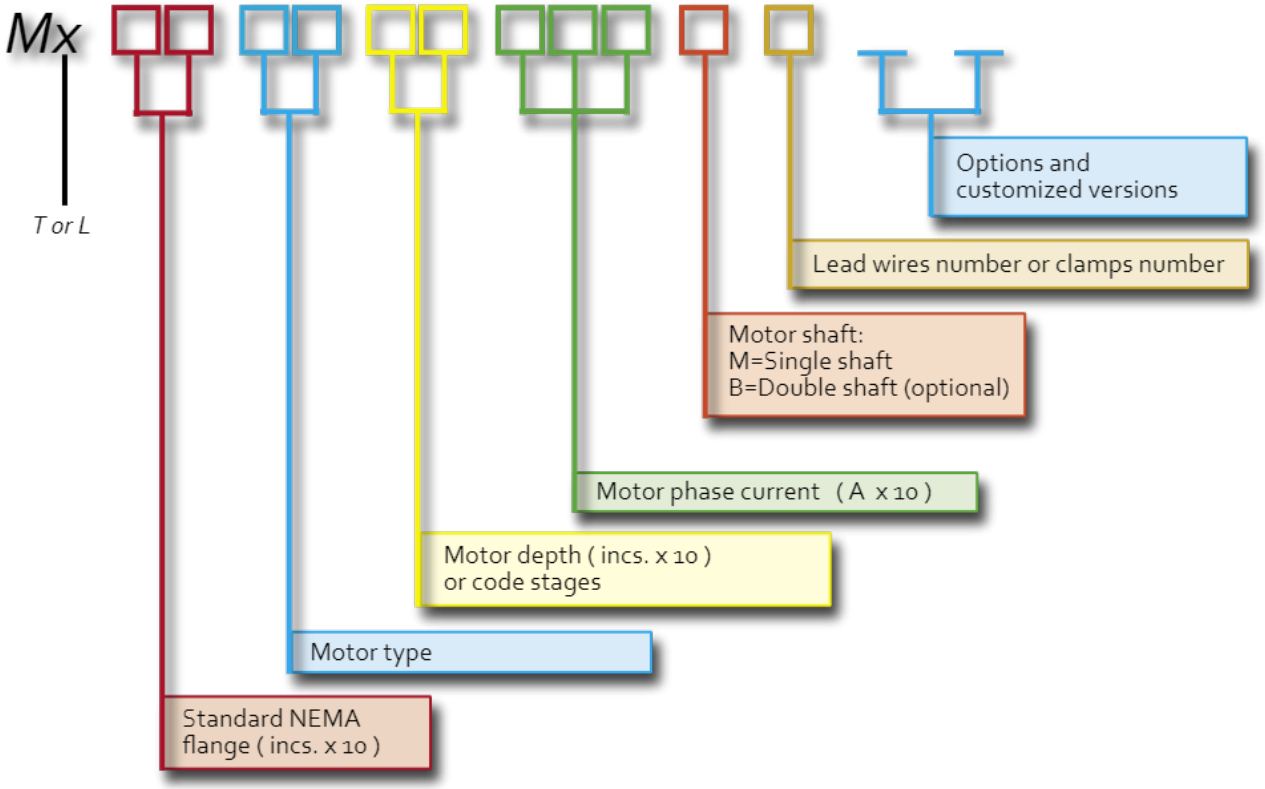
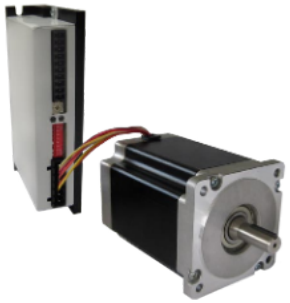


Table of variants suggested for optimal drives and motor models combination.

Drive models \ Motor models		MT08HE	MT12HE	MT17HE	MT23HE	MT24HE	MT34HE (if < 5.0A)	MT34Fx (if > 5.0A)	MT42HE
LW 2014	(max 1.4Arms/ph)	•							
LW 2042 SW 2142	(max 4.2Arms/ph)	•	•	•	•	•	•		
LW 3050	(max 5.5Arms/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 coupling.

The best performance is obtained by making a bipolar connection, linking the windings in series or parallel if you have 8-wire motor models and the indicated drives.
In addition, the performances of the actuators are also directly proportional to the voltage value and the driving method.



Motors electrical specifications, connection and protection class

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

8 or 6 lead wires motors:

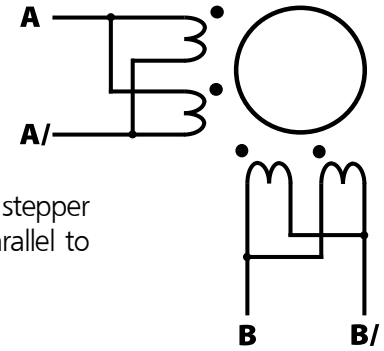
Connection	Resistance (ohms)	Inductance (mH)	Current (Arms)	Holding Torque (Nm)
Unipolar	As in catalog	As in catalog	As in catalog	Catalog x 0.707
Bipolar series	Catalog x 2	Catalog x 4	Catalog x 0.707	As in catalog
Bipolar (half winding)	As in catalog	As in catalog	As in catalog	Catalog x 0.707
Bipolar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

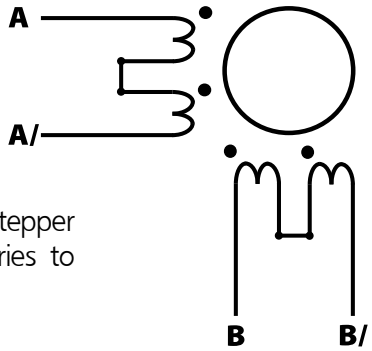
Bipolar parallel and series connections of the motor windings in the 8-wire models.

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.



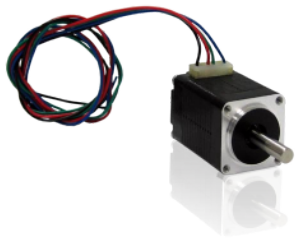
Wiring diagram of a 8-wire stepper motor connected in bipolar series to the drive phases.

Protection class available levels.

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.

MT08HE / 1.8°

• General characteristics

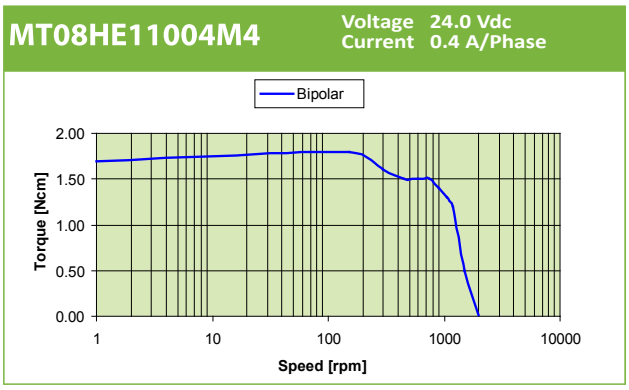


Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 130° C
Protection	IP30
Shaft radial load	21 N (at front shaft end)
Shaft axial load	10 N

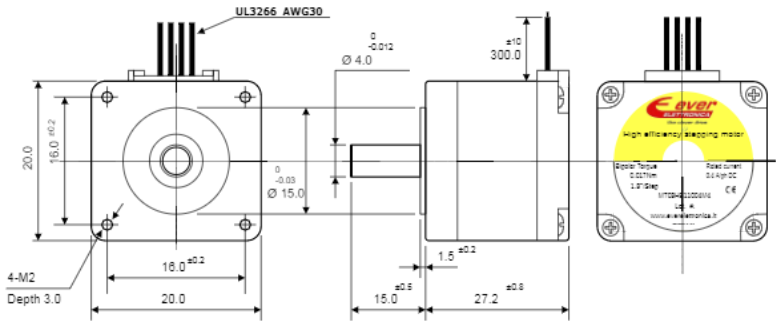
• Specifications

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.26)
MT08HE11004M4	3.12	0.40	7.80	1.90	0.017	--	2.0	4	27.2	0.06	--

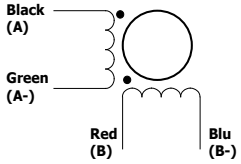
• Torque curves



• Dimensions (Unit: mm)

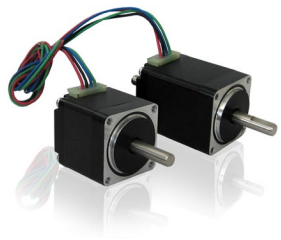


• Wiring diagrams



MT12HE / 1.8°

• General characteristics



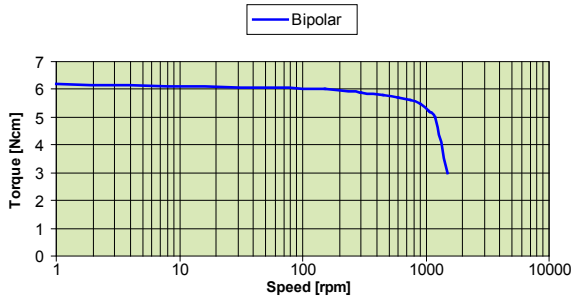
Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 130° C
Protection	IP30
Shaft radial load	50 N (at front shaft end)
Shaft axial load	12 N

• Specifications

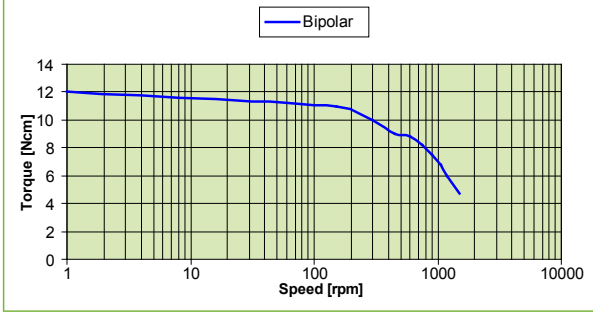
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.26)
MT12HE12007M4	3.20	0.67	4.80	3.90	0.06	––	9.0	4	30.1	0.10	––
MT12HE12008B401	3.84	0.80	4.80	4.30	0.08	––	9.0	4	30.1	0.10	rear shaft L=10.0 D=5.0
MT12HE18015B401	3.00	1.50	2.00	1.90	0.13	––	12.0	4	39.2	0.14	rear shaft L=13.5 D=5.0

• Torque curves

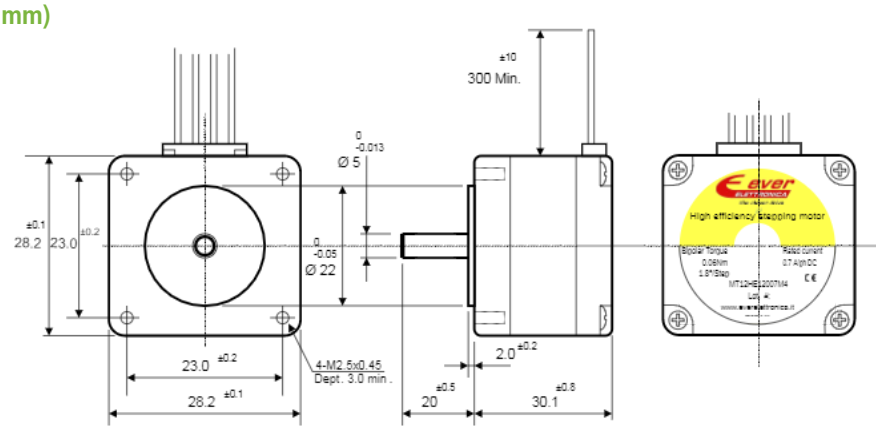
MT12HE12007M4 Voltage 24 Vdc Current 0.7 A/Phase



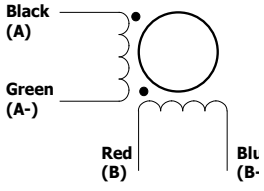
MT12HE18015B401 Voltage 24 Vdc Current 1.5 A/Phase



• Dimensions (Unit: mm)



• Wiring diagrams



MT17HE / 1.8°

• General characteristics

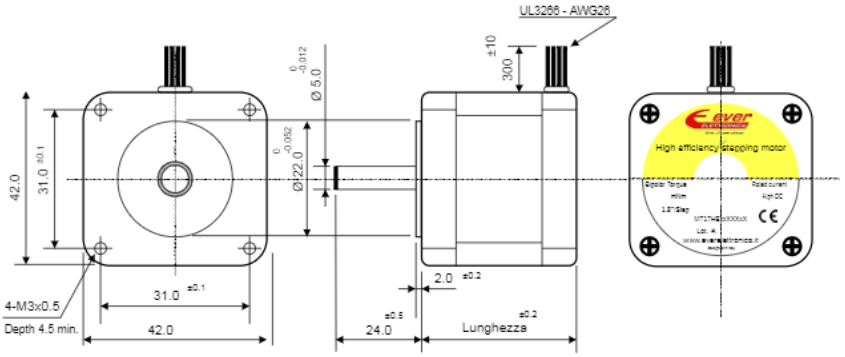
Step accuracy	**±5%**
Temperaure rise	**80K max at nominal current**
Ambient temperature	**-20° C ~ +40° C**
Insulation resistance	**100Mohm min. 500Vdc.**
Dielectric strength	**500Vac 1 minute**
Insulation class	**B, 130° C**
Protection	**IP30**
Shaft radial load	**21 N (at front shaft end)**
Shaft axial load	**10 N**

• Specifications

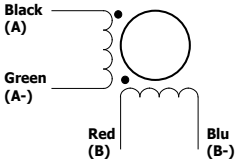
Model Code	*Rated Voltage (V)*	*Phase Current (A)*	*Phase Resistance (ohm)*	*Phase Inductance (mH)*	*Holding Torque (Nm)*	*Detent Torque (Nm)*	*Rotor Inertia (g.cm²)*	*Wires*	*Motor Length (mm)*	*Weight (Kg)*	*Special (see pag.26)*
MT17HE14008M401	2.72	0.80	3.40	5.70	0.15	––	26.6	4*	29.7	0.18	connector on board supplied without lead wires
MT17HE18010M4V	4.30	1.00	4.30	10.00	0.50	––	69.0	4	43.7	0.31	connector on board
MT17HE18020M401	2.00	2.00	1.00	2.00	0.49	––	82.0	4*	47.7	0.37	connector on board supplied without lead wires
MT17HE18020B402	2.00	2.00	1.00	2.00	0.49	––	82.0	4*	47.7	0.38	connector on board supplied without lead wires + rear shaft L=13.5 mm D=5.0 mm
MT17HE24015M4	4.50	1.50	3.00	5.20	0.91	––	220.0	4	59.7	0.60	––
MT17HE24028B4	3.20	2.80	1.15	2.10	0.91	––	220.0	4	59.7	0.61	rear shaft L=13.5 mm D=5.0 mm + encoder mounting holes
MT17HE24028B4E1	3.20	2.80	1.15	2.10	0.91	––	220.0	4	77.7*²	0.91*²	encoder 500 ppr

* = 4 pins on bord connector.
*² = weight and length with encoder included.

• Dimensions (Unit: mm)



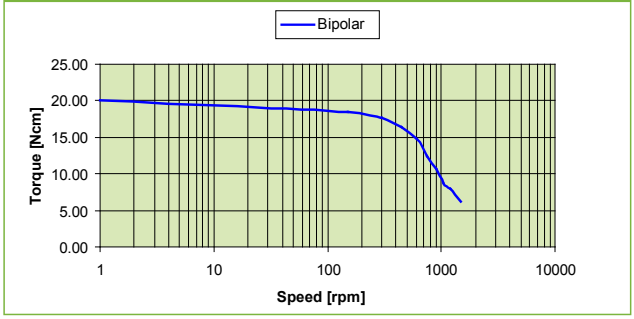
• Wiring diagrams



• Torque curves

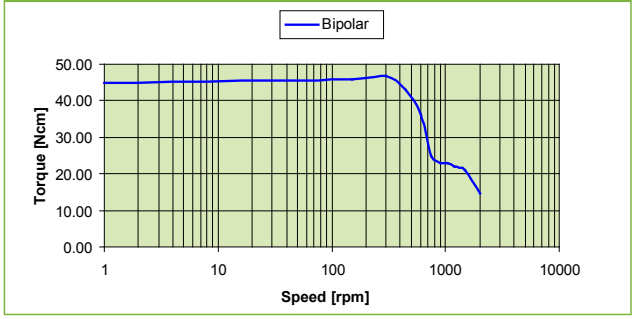
MT17HE14008M401

Voltage 24 Vdc
Current 0.8 A/Phase



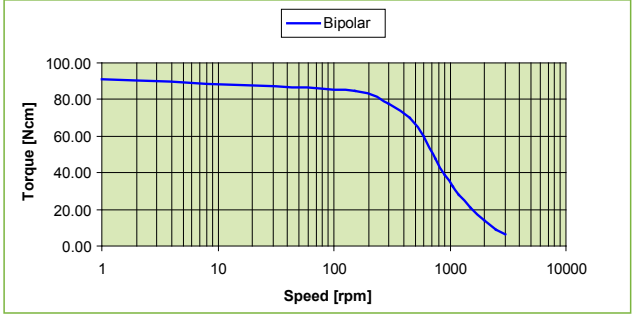
MT17HE18020M401

Voltage 24 Vdc
Current 2.0 A/Phase



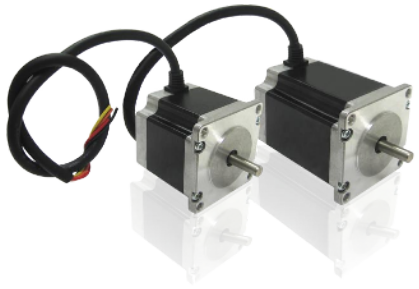
MT17HE24028B4

Voltage 24 Vdc
Current 2.8 A/Phase



MT23HE / 1.8°

• General characteristics

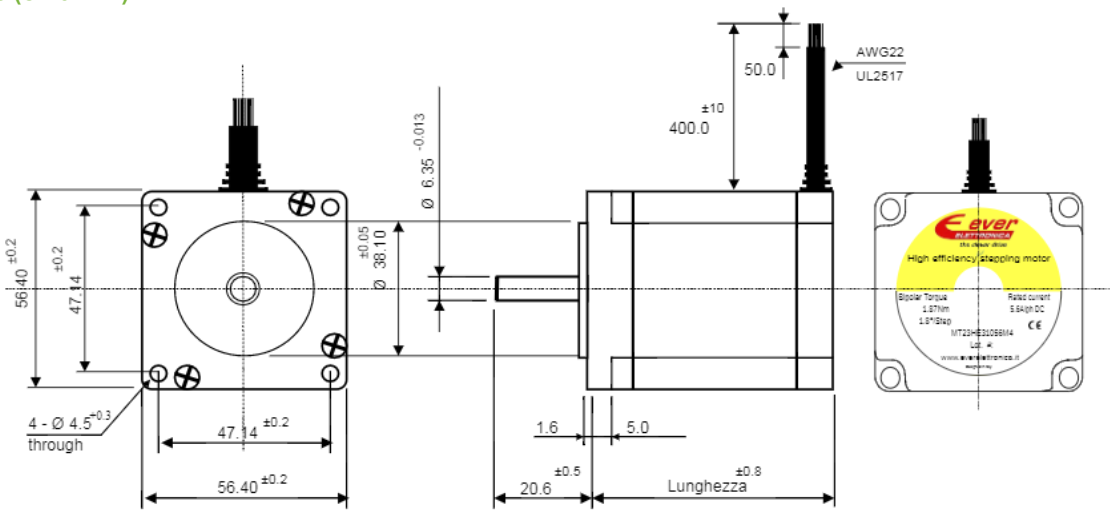


Step accuracy	**±5%**
Temperaure rise	**80K max at nominal current**
Ambient temperature	**-20° C ~ +40° C**
Insulation resistance	**100Mohm min. 500Vdc.**
Dielectric strength	**500Vac 1 minute**
Insulation class	**B, 130° C**
Protection	**IP30**
Shaft radial load	**75 N (at front shaft end)**
Shaft axial load	**15 N**

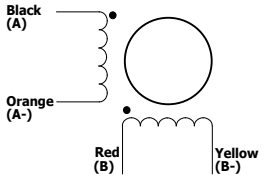
• Specifications

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.26)*
MT23HE22015B401	5.10	1.50	3.40	9.20	1.00	--	280	4	53.3	0.60	rear shaft L=13.5 mm D=5.0 mm connector on board + encoder mounting holes with 300 mm lead wires
MT23HE22020M4	2.20	2.00	1.10	3.90	1.00	--	280	4	53.3	0.68	--
MT23HE22028M401	2.50	2.80	0.90	2.90	1.26	--	280	4	53.3	0.68	D-cut on front shaft L=15.0 mm and P=0.55 mm with 300 mm lead wires
MT23HE31042B403	2.10	4.20	0.50	1.77	2.00	--	480	4	77.3	1.10	rear shaft L=13.5 mm D=6.35 mm + encoder mounting holes
MT23HE31056M4	1.80	5.60	0.33	0.80	1.87	--	480	4	77.3	1.10	--

• Dimensions (Unit: mm)



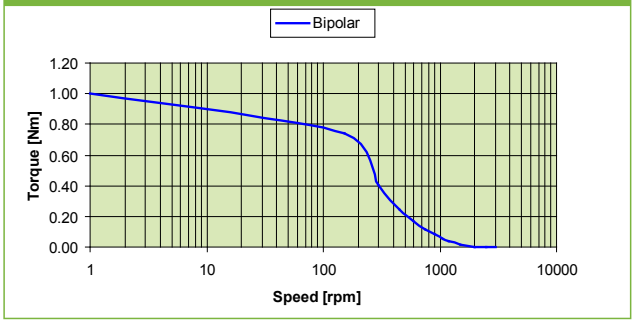
• Wiring diagrams



• Torque curves

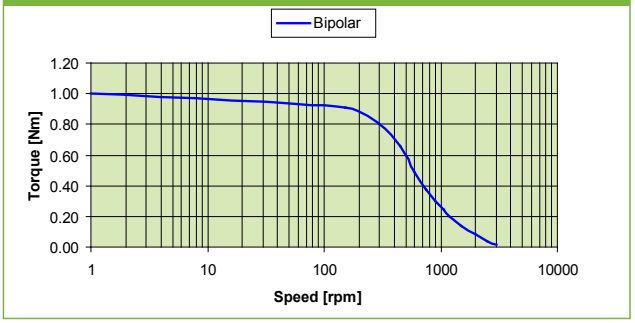
MT23HE22015B401

Voltage 24 Vdc
Current 1.0 A/Phase



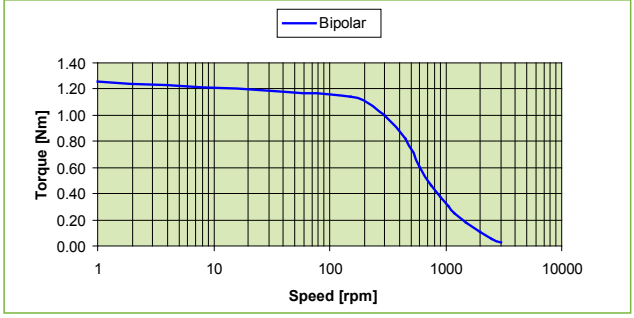
MT23HE22020M4

Voltage 24 Vdc
Current 2.0 A/Phase



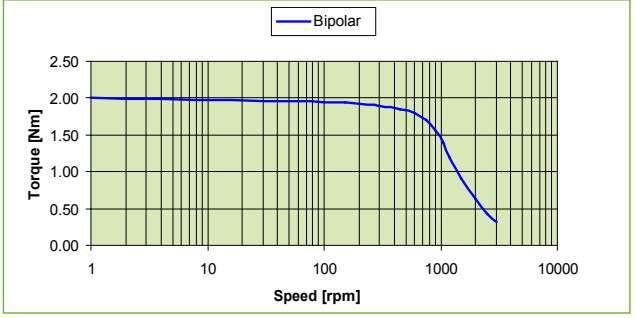
MT23HE22028M401

Voltage 24 Vdc
Current 2.8 A/Phase



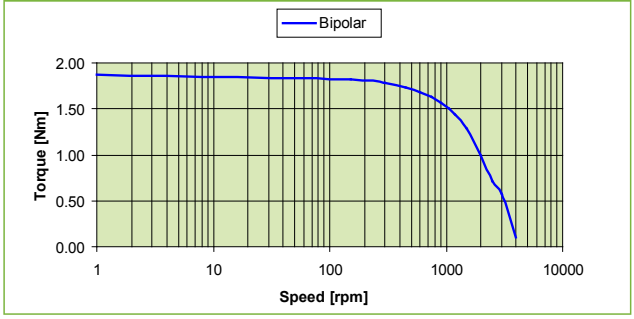
MT23HE31042B403

Voltage 48 Vdc
Current 4.2 A/Phase



MT23HE31056M4

Voltage 48 Vdc
Current 5.6 A/Phase



MT23HE IP65 / 1.8°

IP protection

- General characteristics

Step accuracy	±5%
Temperaure rise	80K max at numinal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 130° C
Protection	IP65
Shaft radial load	75 N (at front shaft end)
Shaft axial load	15 N

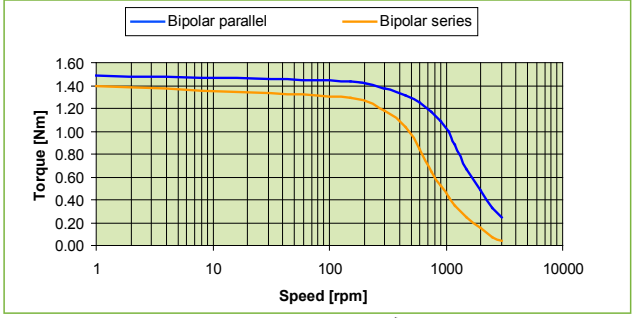
- Specifications

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.26)
MT23HE22028M8P	1.96	2.80	0.70	1.20	1.40	--	280	8	70.2	0.68	--
MT23HE31042M4P1	2.52	4.20	0.60	1.77	2.20	--	480	4	94.2	1.10	D-cut on front shaft L=6.0 mm P=0.5 mm with 1500 mm wires
MT23HE31042B4P1	2.52	4.20	0.60	1.77	2.20	--	480	4	94.2*	1.15	D-cut on front shaft L=6.0 mm and P=0.5 mm with 1500 mm wires and rear shaft L=13.5 mm D=6.35 mm with encoder mounting holes in the rear box

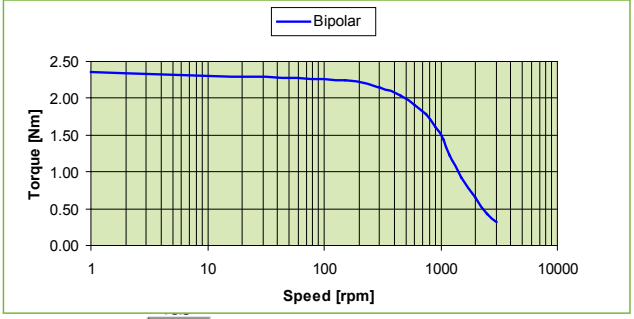
* = 32 mm depth rear box for encoder mounting not included.

- Torque curves

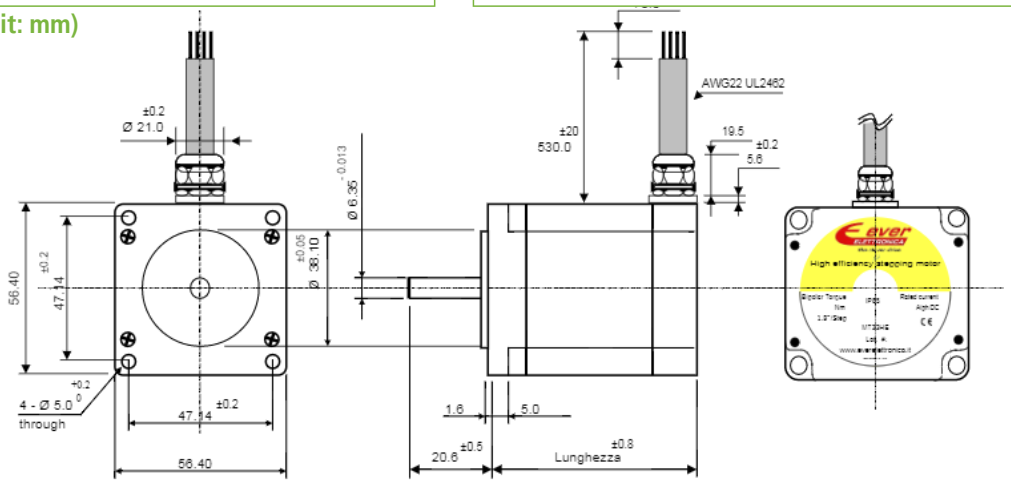
MT23HE22028M8P — Voltage 36 Vdc, Current 4.2 A/Phase (parallel) 2.0 A/Phase (series)



MT23HE31042x4P1 — Voltage 50 Vdc, Current 4.2 A/Phase



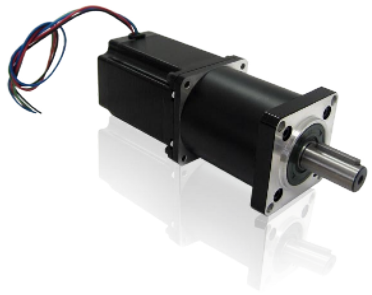
- Dimensions (Unit: mm)



- Wiring diagrams

MT23HE G / 1.8°
Planetary gearbox

- General characteristics



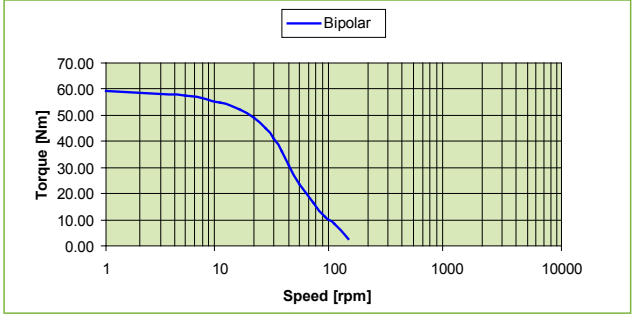
Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vdc.
Dielectric strength	500Vac 1 minute
Insulation class	B, 130° C
Protection	IP30
Shaft radial load	75 N (at front shaft end)
Shaft axial load	15 N

- Specifications

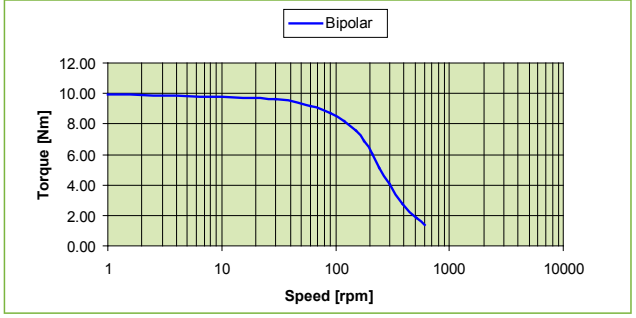
Model Code	Rated Voltage (V)	Phase Current (A)	Phase Resistance (ohm)	Phase Inductance (mH)	Holding Torque (Nm)	Detent Torque (Nm)	Rotor Inertia (g.cm²)	Wires	Motor Length (mm)	Weight (Kg)	Special (see pag.26)
MT23HE31042B4G1	2.10	4.20	0.50	1.77	2.00	--	480	4	77.3	1.10	1:30 gearbox integrated rear shaft L=13.5 mm D=5.0 mm + encoder mounting holes
MT23HE31042B4G2	2.10	4.20	0.50	1.77	2.00	--	480	4	77.3	1.10	1:5 gearbox integrated rear shaft L=13.5 mm D=5.0 mm + encoder mounting holes

- Torque curves

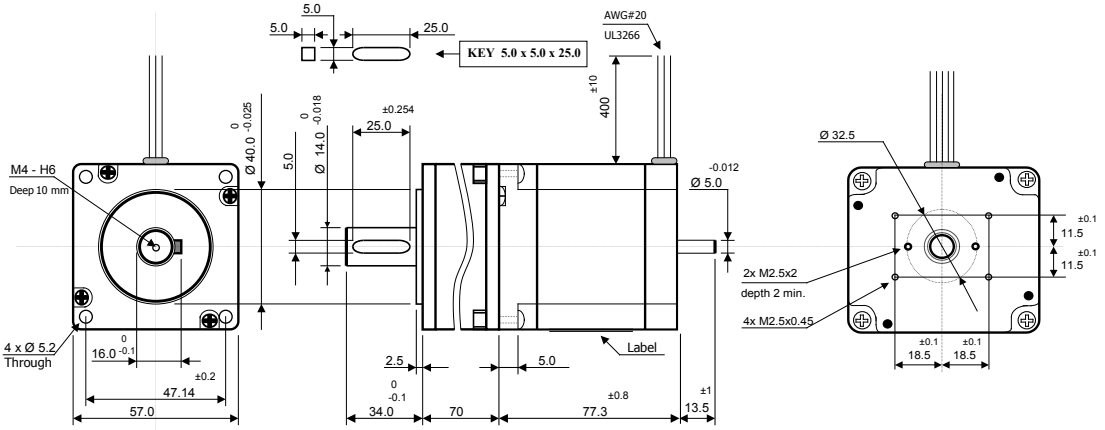
MT23HE31042B4G1 Voltage 48 Vdc Current 4.2 A/Phase



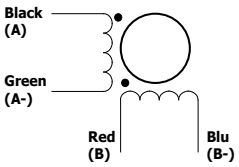
MT23HE31042B4G2 Voltage 48 Vdc Current 4.2 A/Phase



- Dimensions (Unit: mm)



- Wiring diagrams



MT24HE / 1.8°

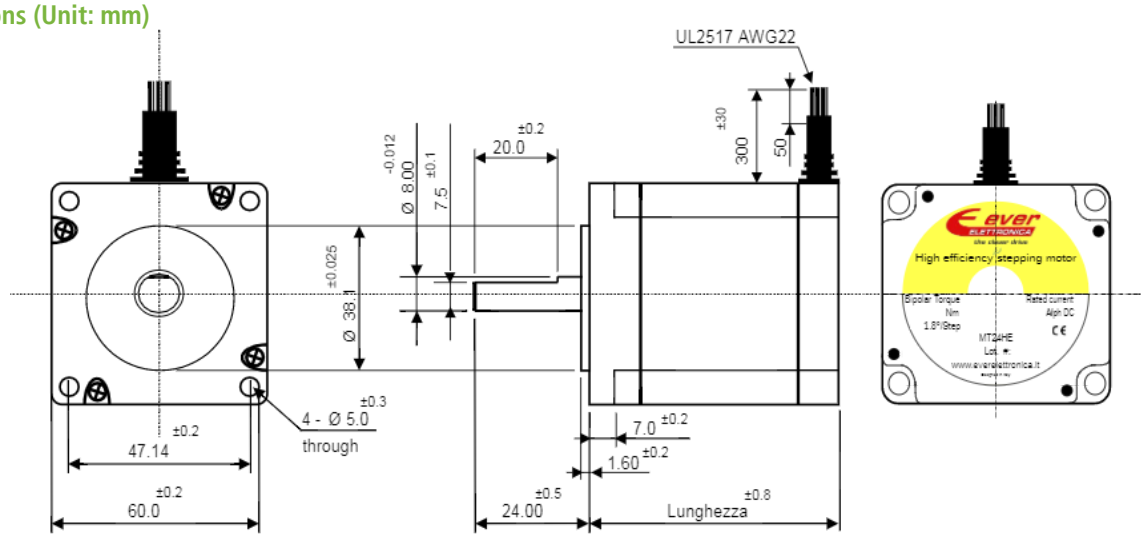
• General characteristics

Step accuracy	**±5%**
Temperaure rise	**80K max at nominal current**
Ambient temperature	**-20° C ~ +40° C**
Insulation resistance	**100Mohm min. 500Vcc.**
Dielectric strength	**500Vca 1 minute**
Insulation class	**B, 130° C**
Protection	**IP30**
Shaft radial load	**75 N (at front shaft end)**
Shaft axial load	**15 N**

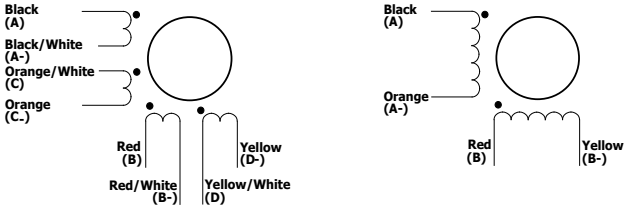
• Specifications

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.26)*
MT24HE26028M401	3.60	2.80	1.30	5.00	2.10	––	290	4	65.5	1.00	---
MT24HE35030M801	5.40	3.00	1.80	3.00	3.00	––	810	8	85.5	1.30	2000 mm lead wires without tube
MT24HE35040M401	2.80	4.00	0.70	2.40	2.70	––	810	4	85.5	1.30	90° double D-cut on front shaft L=15.0 mm and P=7.5 mm and flange spigot Ø 36.0 and Ø 4.5 mm fixing holes
MT24HE35042B401	3.80	4.20	0.90	3.00	3.00	––	810	4	85.5	1.30	rear shaft L=13.5 mm D=6.35 mm with encoder mounting holes and 2000 mm lead wires

• Dimensions (Unit: mm)



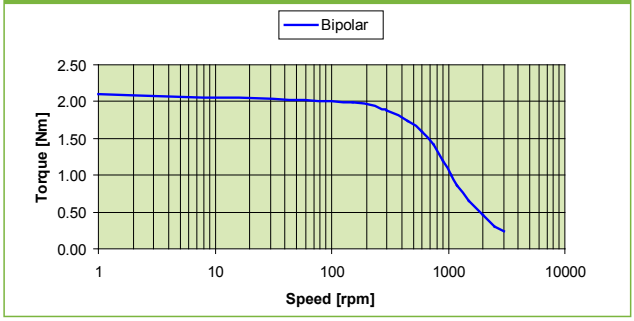
• Wiring diagrams



• Torque curves

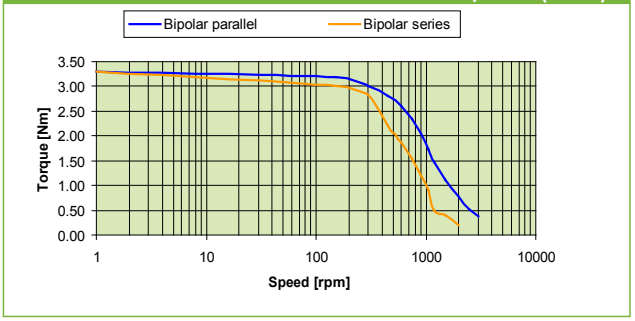
MT24HE26028M401

Voltage 70 Vdc
Current 2.8 A/Phase



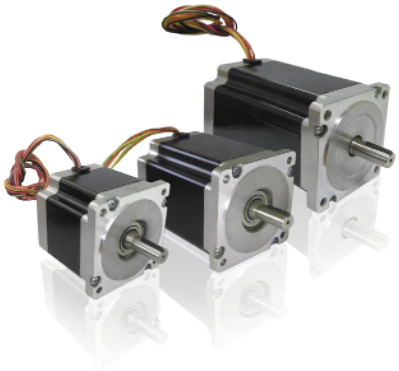
MT24HE35030M801

Voltage 70 Vdc
Current 4.2 A/Phase (parallel)
2.1 A/Phase (series)



MT34HE / 1.8°

• General characteristics

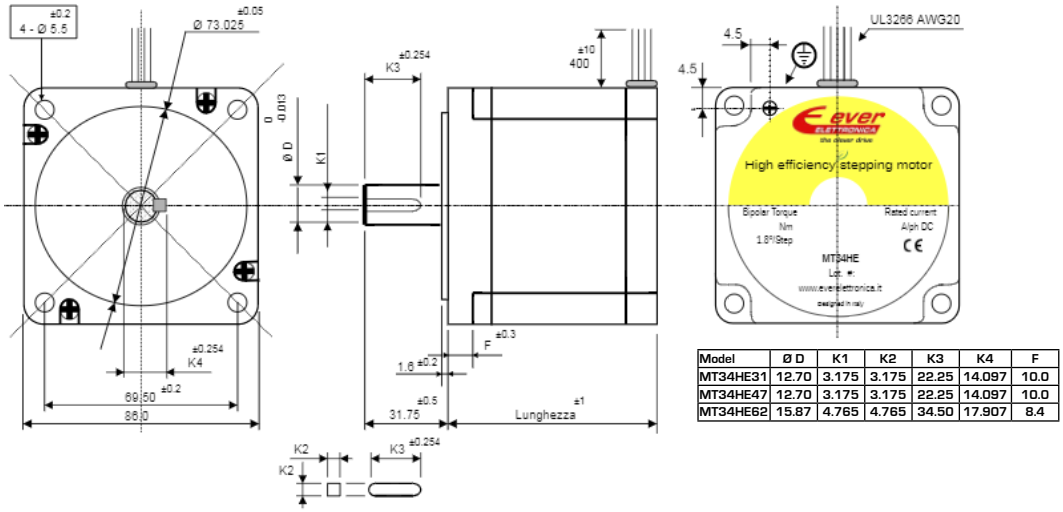


Step accuracy	**±5%**
Temperaure rise	**80K max at nominal current**
Ambient temperature	**-20° C ~ +40° C**
Insulation resistance	**100Mohm min. 500Vcc.**
Dielectric strength	**500Vca 1 minute**
Insulation class	**B, 130° C**
Protection	**IP30**
Shaft radial load	**220 N (at front shaft end)**
Shaft axial load	**60 N**

• Specifications

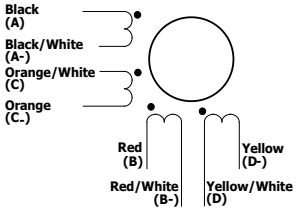
Model Code	*Rated Voltage (V)*	*Phase Current (A)*	*Phase Resistance (ohm)*	*Phase Inductance (mH)*	*Holding Torque (Nm)*	*Detent Torque (Nm)*	*Rotor Inertia (g.cm²)*	*Wires*	*Motor Length (mm)*	*Weight (Kg)*	*Special (see pag.26)*
MT34HE31042B8K	3.36	4.20	0.80	4.00	5.94	--	1400	8	79.0		rear shaft L=13.5 mm D=6.35 mm
MT34HE47060B8K	4.80	6.00	0.80	4.20	11.80	--	2500	8	118.5	4.00	rear shaft L=13.50 mm D=Ø 6.35 mm
MT34HE47090M8K	4.05	9.00	0.45	1.60	11.80	--	2500	8	118.5	4.00	---
MT34HE62060M8K	3.90	6.00	0.65	3.40	12.20	--	4800	8	158.5	5.50	---
MT34HE62060B8K	3.90	6.00	0.65	3.40	12.20	--	4800	8	158.5	5.50	rear shaft L=13.5 mm D=6.35 mm

• Dimensions (Unit: mm)



Model	Ø D	K1	K2	K3	K4	F
MT34HE31	12.70	3.175	3.175	22.25	14.097	10.0
MT34HE47	12.70	3.175	3.175	22.25	14.097	10.0
MT34HE62	15.87	4.765	4.765	34.50	17.907	8.4

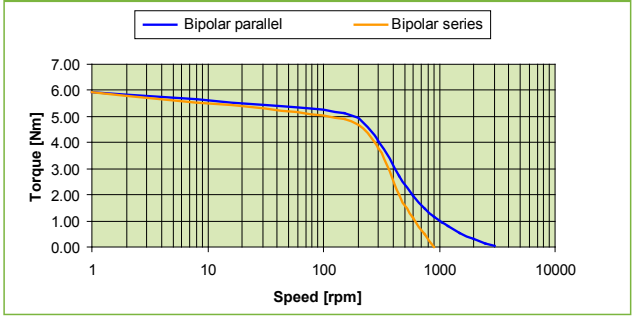
• Wiring diagrams



• Torque curves

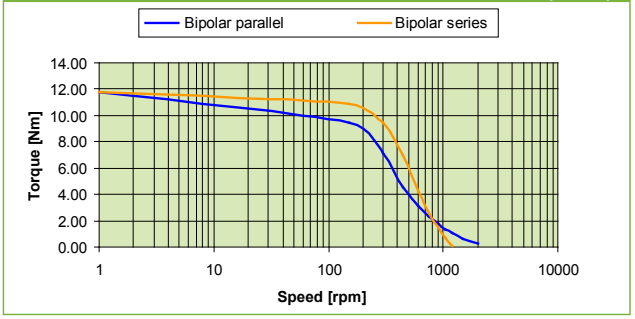
MT34HE31042B8K

Voltage 48 Vdc
Current 6.0 A/Phase (parallel)
3.0 A/Phase (series)



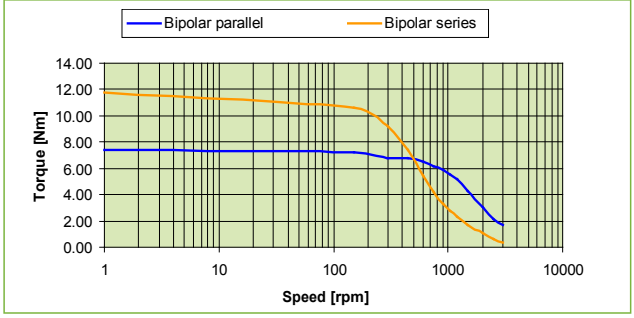
MT34HE47060B8K

Voltage 48 Vdc
Current 8.0 A/Phase (parallel)
6.4 A/Phase (series)



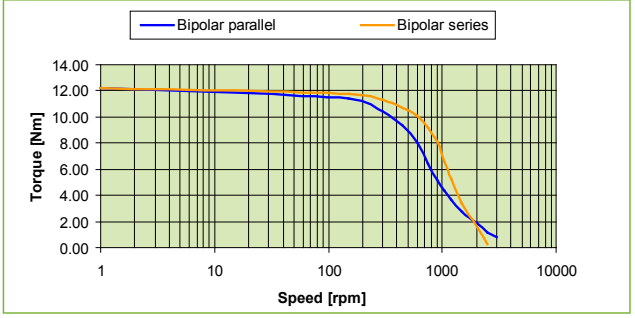
MT34HE47090M8K

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



MT34HE62060x8K

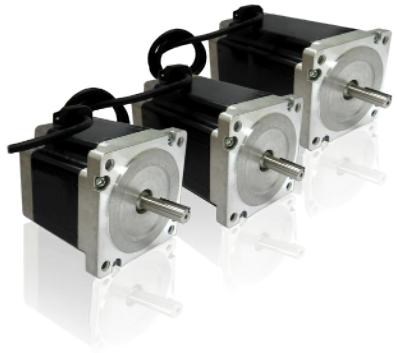
Voltage 110 Vdc
Current 8.5 A/Phase (parallel)
4.2 A/Phase (series)



MT34HE KV / 1.8°

High voltage

- General characteristics

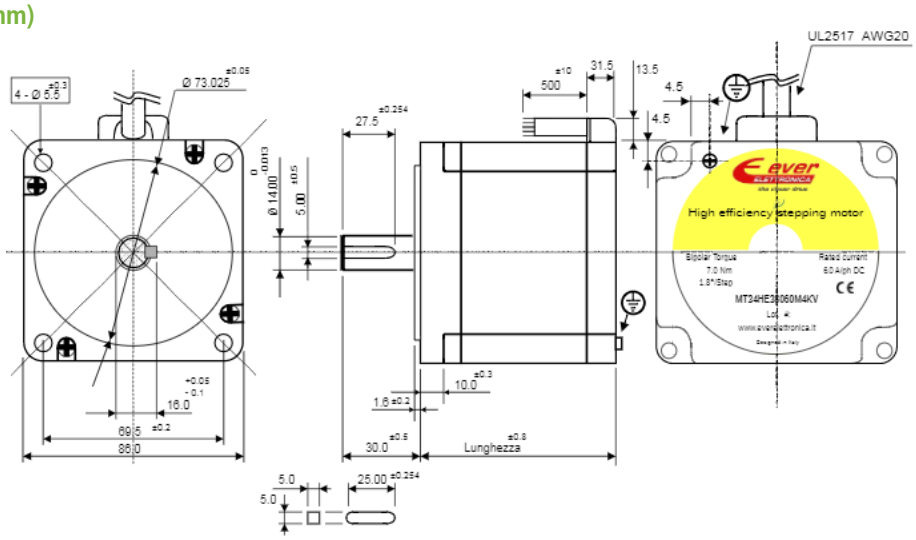


Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vcc.
Dielectric strength	1500Vca 1 minute
Insulation class	F, 155° C
Protection	IP30
Shaft radial load	220 N (at front shaft end)
Shaft axial load	60 N

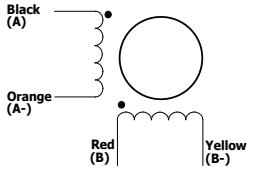
- Specifications

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.26)
MT34HE26060M4KV	1.38	6.00	0.23	1.72	3.60	--	1100	4	67.5	2.00	---
MT34HE38060M4KV	2.16	6.00	0.36	2.80	7.00	--	3000	4	96.5	3.00	---
MT34HE50060M4KV	2.20	6.00	0.37	3.40	9.30	--	2775	4	125.5	4.24	---

- Dimensions (Unit: mm)



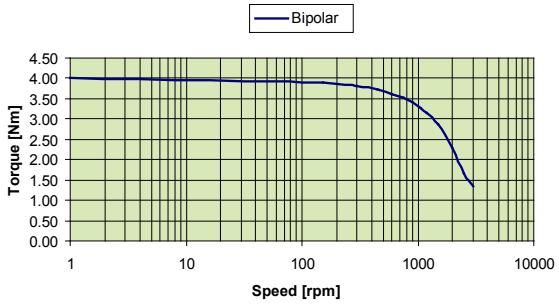
- Wiring diagrams



• Torque curves

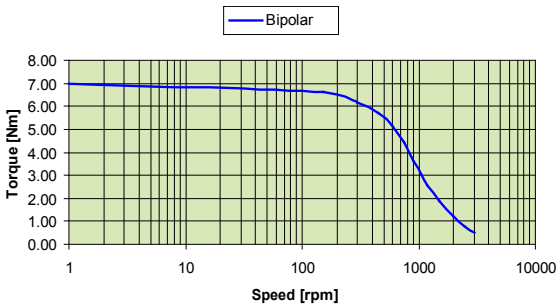
MT34HE26060M4KV

Voltage 110 Vdc
Current 6.0 A/Phase



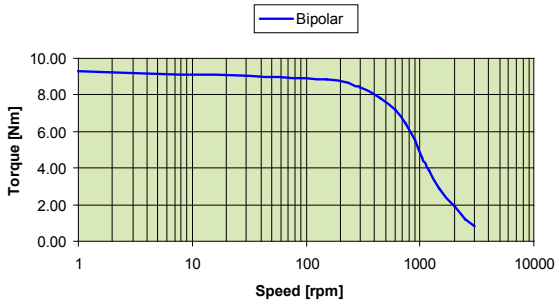
MT34HE38060M4KV

Voltage 110 Vdc
Current 6.0 A/Phase



MT34HE50060M4KV

Voltage 110 Vdc
Current 6.0 A/Phase



MT34HE IP65 / 1.8°

IP protection

• General characteristics

Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vcc.
Dielectric strength	500Vca 1 minute
Insulation class	B, 130° C
Protection	IP65
Shaft radial load	220 N (at front shaft end)
Shaft axial load	60 N

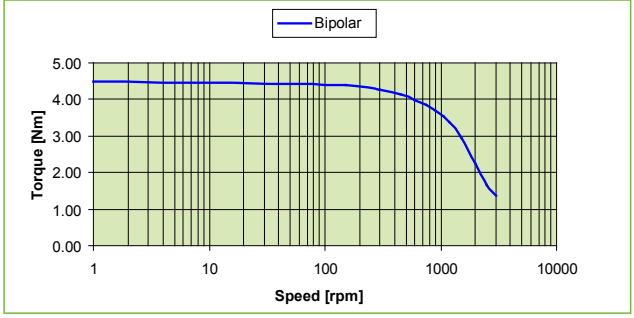
• Specifications

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.26)
MT34HE31084M4LC	1.30	8.40	0.16	1.40	4.50	––	1400	4*	78.5	2.40	---
MT34HE47120M4LC	3.00	12.00	0.25	1.70	11.80	––	2500	4*	118.5	4.00	---

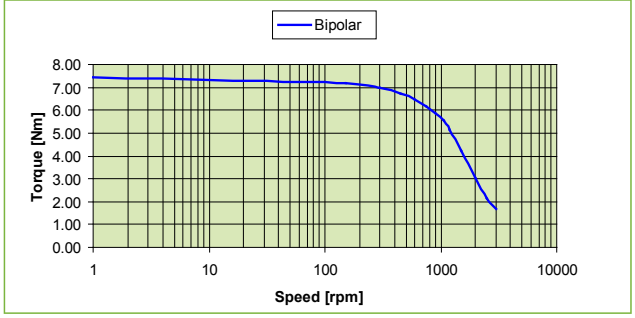
* = 4 pins on connector, see the winding diagram for connections and pinout.

• Torque curves

MT34HE31084M4LC Voltage 110 Vdc Current 8.4 A/Phase



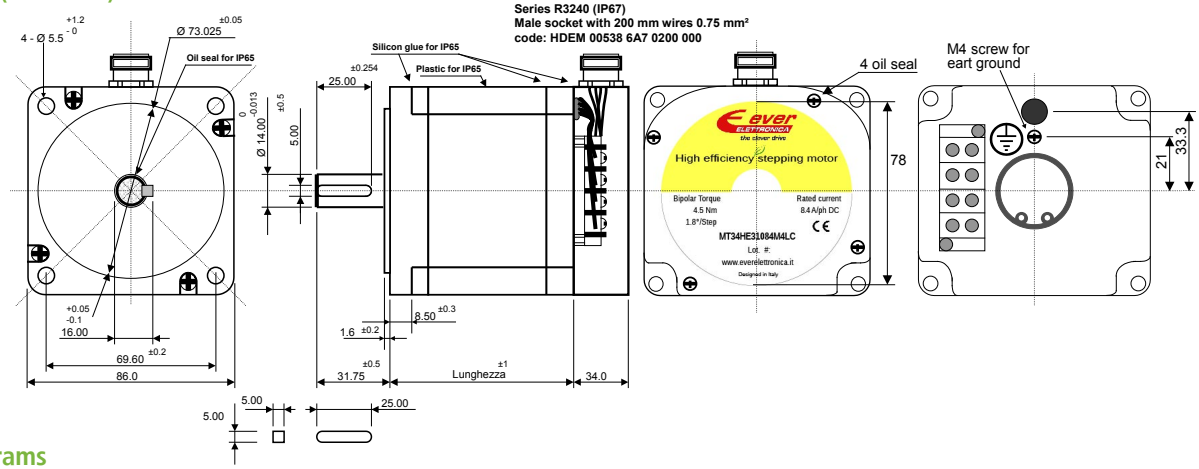
MT34HE47120M4LC Voltage 110 Vdc Current 8.0 A/Phase



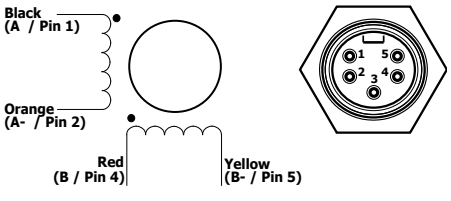
• Dimensions (Unit: mm)

Motor connector

Series R3240 (IP67)
Male socket with 200 mm wires 0.75 mm²
code: HDEM 00538 6A7 0200 000



• Wiring diagrams

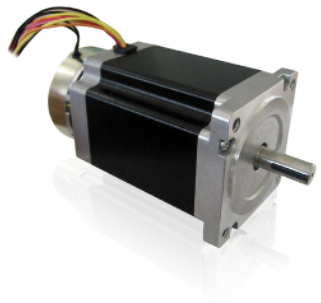


Driver connection	Motor lead wires output	MS connector wires colours	MS connector connection
A	Black (1)	Black	1
A -	Orange (2)	Blue	2
B	Red (3)	Brown	4
B -	Yellow (4)	White	5
GND	Screw on rear flange	Green/Yellow	3

MT34HE F / 1.8°

With brake

• General characteristics



Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vcc.
Dielectric strength	500Vca 1 minute
Insulation class	B, 130° C
Protection	IP30
Shaft radial load	220 N (at front shaft end)
Shaft axial load	60 N

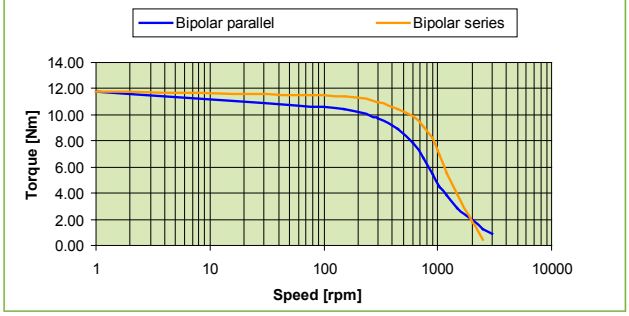
• Specifications

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.26)
MT34HE47060B8F1	4.80	6.00	0.80	4.20	11.80	––	2500	8	118.5*	4.00	rear flange brake installed of 24Vdc, 13W, 4Nm

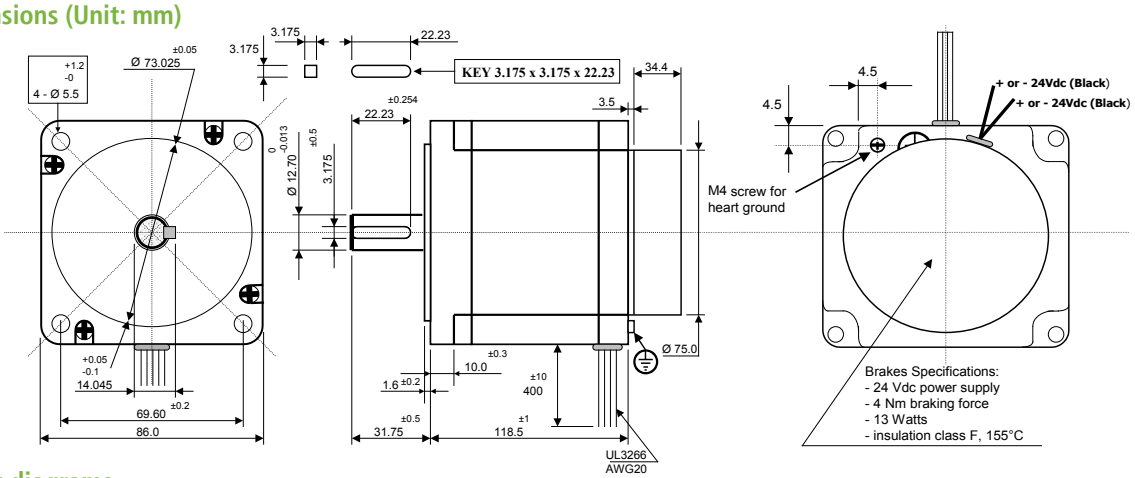
* = motor depth without brake mounted.

• Torque curves

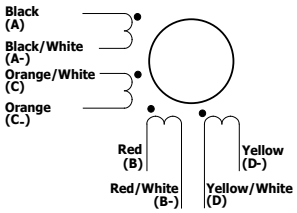
MT34HE47060B8F1 — Voltage 110 Vdc; Current 8.0 A/Phase (parallel), 4.2 A/Phase (series)



• Dimensions (Unit: mm)



• Wiring diagrams



MT42HE / 1.8°

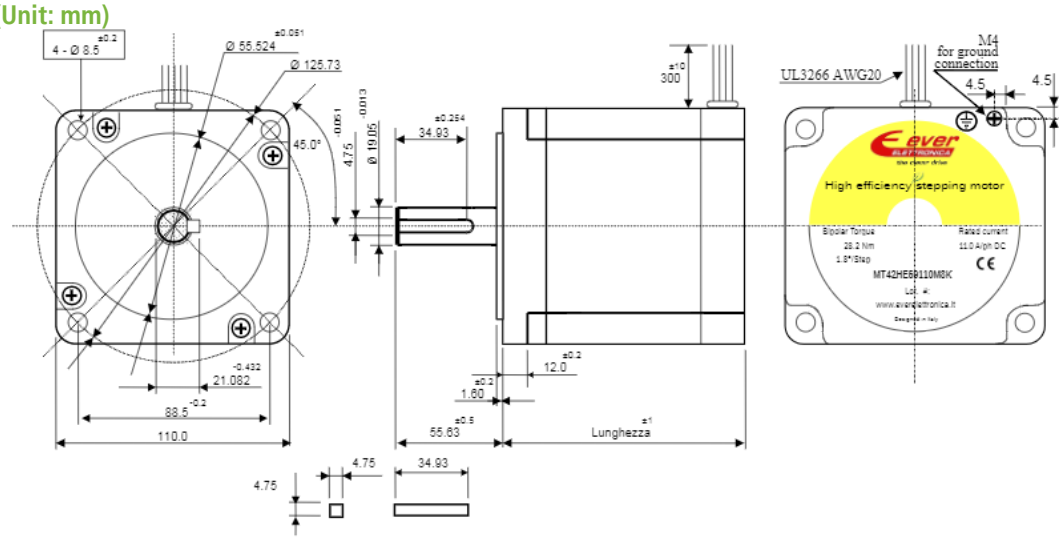
• General characteristics

Step accuracy	±5%
Temperaure rise	80K max at nominal current
Ambient temperature	-20° C ~ +40° C
Insulation resistance	100Mohm min. 500Vcc.
Dielectric strength	1500Vca 1 minute
Insulation class	F, 155° C
Protection	IP30
Shaft radial load	220 N (at front shaft end)
Shaft axial load	60 N

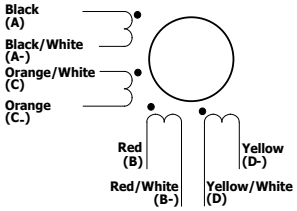
• Specifications

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.26)
MT42HE59110M8K	2.86	11.0	0.26	1.75	28.2	--	10900	8	149.0	11.0	---
MT42HE79070B8K	6.58	7.0	0.94	9.45	50.0	--	16200	8	201.0	11.0	rear shaft L=13.5 mm D=6.35 mm

• Dimensions (Unit: mm)



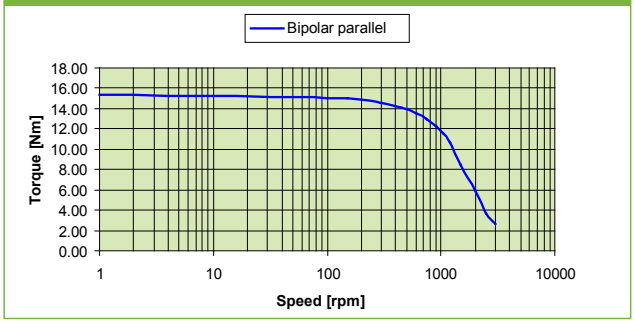
• Wiring diagrams



• Torque curves

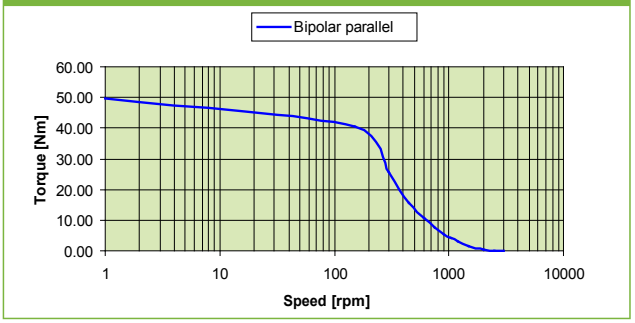
MT42HE59110M8K

Voltage 140 Vdc
Current 8.5 A/Phase (parallel)



MT42HE79070B8K

Voltage 140 Vdc
Current 9.8 A/Phase (parallel)



Available options chart

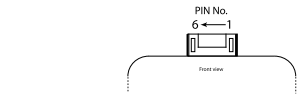
All customizations available on request or applicated to the motors family models.

You can choose from motor family models with optimum mechanical and electrical characteristics and a wide variables range.

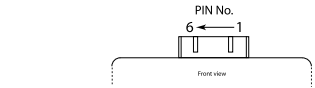
Motors models / *Options*	Mechanical drawing	MT08HE	MT12HE	MT17HE	MT23HE	MT23HE IP65	MT24HE	MT34HE	MT34HE KV	MT34HE IP65	MT42HE
Connector on motor board	Picture 1	-	-	●	●	●	●	●	●	●	-
Rear shaft	Picture 2	●	●	●	●	●	●	●	●	●	-
Rear shaft with encoder provision	Picture 3	-	-	●	●	-	●	●	●	-	-
Front shaft with special diameters	Picture 4	●	●	●	●	●	●	●	●	●	●
Front shaft key	Picture 5	-	-	-	-	-	-	●	●	●	●
Front shaft D-cut	Picture 6	●	●	●	●	●	●	●	●	●	●
Encoder mounted on rear shaft	--	-	-	●	●	●	●	●	●	-	●
Customized cable	--	●	●	●	●	●	●	●	●	-	●
IP65 protection	--	-	-	-	-	O	-	-	-	O	-

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

Picture 1 - Connector on motor board

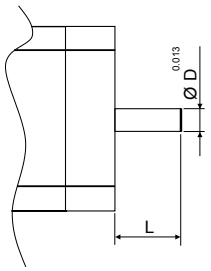


Code	Connector on board	Connector lead wires side
MT17HE14008M401	JST S6B-PH-K-S-2.2	
MT17HE18010M4V	JST S6B-PH-K-S-2.2	JST PHR-6 + JST SPH-002T-P0.5S (x4)
MT17HE18020M401	JST S6B-PH-K-S-2.2	
MT17HE18020B402	JST S6B-PH-K-S-2.2	



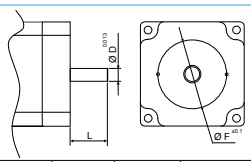
Code	Connector on board	Connector lead wires side
MT23HE22015B401	JST XH-A-1	JST XHP-11 + JST SXH-001T-P0.6

Picture 2 - Rear shaft



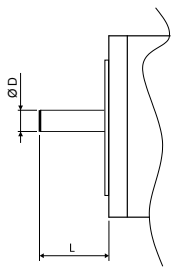
Code	Front shaft length (L)	Front shaft diameter (D)
MT12HE12008B401	10.0 mm	Ø 5.00 mm
MT12HE18015B401	13.5 mm	Ø 5.00 mm
MT17HE18020B402	13.5 mm	Ø 5.00 mm

Picture 3 - Rear shaft with encoder provision



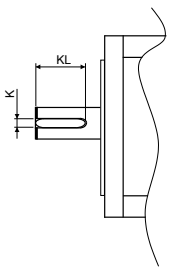
Code	Front shaft length (L)	shaft Ø (D)	fixing holes Ø (F)	Holes dimensions
MT17HE24028B4	13.5 mm	Ø 5.00 mm	Ø 32.5 mm	2x M2.5x2
MT23HE22015B401	13.5 mm	Ø 5.00 mm	Ø 32.5 mm	2x M2.5x2
MT23HE31042B403	13.5 mm	Ø 6.00 mm	Ø 46.0 mm	2x M2.5x2
MT23HE31042B4G1	13.5 mm	Ø 5.00 mm	Ø 32.5 mm	2x M2.5x2
MT23HE31042B4G2	13.5 mm	Ø 5.00 mm	Ø 32.5 mm	2x M2.5x2
MT23HE31042B4P1*	13.5 mm	Ø 6.35 mm	Ø 32.5 mm + Ø 46.0 mm	2x M2.5x2 + 2x M2.5x5
MT24HE35042B401	13.5 mm	Ø 6.35 mm	Ø 46.0 mm	2x M2.5x2
MT34HE31042B8K	13.5 mm	Ø 6.35 mm	Ø 46.0 mm	2x M2.5x2
MT34HE47060B8K	13.5 mm	Ø 6.35 mm	Ø 46.0 mm	2x M2.5x2
MT34HE62060B8K	13.5 mm	Ø 6.35 mm	Ø 46.0 mm	2x M2.5x2
MT42HE79070B8K	13.5 mm	Ø 6.35 mm	Ø 32.5 mm + Ø 46.0 mm	4x M2.5x0.45

Picture 4 - Customized front shaft



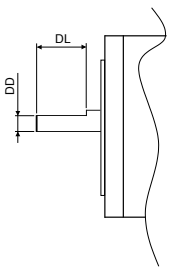
The motor front shaft can be required with metric or NEMA diameters standards and communicating the values of Ø D and L, according to the motor torque.

Picture 5 - Front shaft key



On front shaft you can require a key following the metric standard or the NEMA standard, communicating the values of K and KL.

Picture 6 - Front shaft D-cut



On front shaft you can require a D-cut communicating the values of DD and DL.

Note

EVER snc

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