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## Brushless Servo Motors & Digital Servo Drives

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Many types of flexible, all digital amplifiers ranging from 30 watts to 15 kW along with a wide variety of high-performance brushless servomotors create an extremely flexible hardware platform that suits a wide variety of industrial applications. These applications include lathes and machining centers, metal processing, winding machines, industrial robots, semiconductor manufacturing devices, and chip mounters. Complimentary products include motors with incremental encoders or absolute encoders, brakes, or gearboxes.



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## Brushless Servo Motors I2TMPH & I2TMGH Series

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### Servo Motor Features & Benefits:

#### I2TMPH

- Compact
  - Length is about ½ of conventional motors
  - Up to 5000 rpm max. speed
- Enhanced Environmental Resistance
  - IP67 standard
  - Reinforced lead-out cable access
- Encoders (reduced wiring serial encoder)
  - 13-bit (2,048ppr x 4) incremental encoder, standard
  - 16-bit (16,384ppr x 4) absolute encoder, optional
- Certified International Standards include UL, cUL recognized, CE compliance

#### I2TMGH

- Compact
  - Small sized motor. Ten types of rated outputs ranging from 0.79 to 1988 in-lb of peak torque. Optional built-in holding brake available.
- Higher Speed and Acceleration
  - Up to 3000rpm maximum
  - High torque to inertia ratio
- Encoders
  - 17-bit incremental encoder (standard)
  - 17-bit absolute encoder (optional)
- Enhanced Environmental Resistance
  - Totally enclosed, self-cooled IP67 (excluding shaft)
  - Shaft seal, optional
- Certified International Standards include UL, cUL recognized, CE compliance

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## Digital Torque Amplifier I2TDG Series

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### Features & Benefits:

- 100% All Digital Architecture
- Provides current-command interface for convenient integration
- Serial encoder technology enables automatic configuration to motor
- Economical
- Easy setup
- Input power: 90 to 253 Vac Single-phase, 127 to 357 VAC Three-phase
- UL, cUL, CE Compliance

### Applications:

- Machine Tool
- Pharmaceutical
- Automotive
- Material Handling
- Robotics
- Medical
- Converting
- Textile
- Packaging
- Semiconductor

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## Digital Torque, Velocity & Position Amplifier I2TDH Series

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### Features & Benefits:

- High-response with load frequency characteristics of 400 Hz
- High-resolution Serial Encoder (16 or 17 bits)
- Maximum rotation speed of 5,000 rpm on certain motors
- Smooth operation at low speed (due to reduced motor speed ripple)
- Speed observer control for higher performance
- Easy to install and operate
- Auto-tuning for fast set-up of new drives
- Digitally select torque, velocity, or position control by simply changing a parameter
- High Torque
- Fast Current Speed/Position Loop Update Times
- Anti-resonance Filters
- Compact Size

### Applications:

- Material Handling Equipment
- Machine Tool
- Packaging Machines
- Robots
- PCB Drilling Machines
- Chip Mounters

## I2TMPH – AC Servomotor & Amplifier Selector:

Description System Voltage & Construction	Peak Torque* (oz-in)	Rated Torque* (oz-in)	Motor Inertia (oz-in - s <sup>2</sup> x10 <sup>-3</sup> )	Motor Model	Amplifier Model – I2TDG	
					1-Phase	3-Phase
200V 13-Bit Incremental Encoder Straight Shaft with Keyway 5000rpm* Pre-wired with Heavy-duty Connectors	135	45.1	0.917	I2TMPH-01AAE41D	01GT	N/A
	135	45.1	1.46	I2TMPH-01AAE4CD	01GT	N/A
	270	90.1	2.96	I2TMPH-02AAE41D	04GT	N/A
	270	90.1	4.35	I2TMPH-02AAE4CD	04GT	N/A
	542	181	4.92	I2TMPH-04AAE41D	04GT	10GT
	542	181	6.31	I2TMPH-04AAE4CD	04GT	10GT
	1010	338	29.9	I2TMPH-08AAE41D	10GT	10GT
	1010	338	35.7	I2TMPH-08AAE4CD	10GT	10GT
	2027*	676*	57.1	I2TMPH-15AAE41D	15GT*	15GT
	2027*	676*	67.8	I2TMPH-15AAE4CD	15GT*	15GT
100V, 1-Phase 13-Bit Incremental Encoder Straight Shaft with Keyway 5000rpm* Pre-wired with Heavy-duty Connectors	135	45.1	0.917	I2TMPH-01BAE41D	04GT	N/A
	135	45.1	1.46	I2TMPH-01BAE4CD	04GT	N/A
	270	90.1	2.96	I2TMPH-02BAE41D	04GT	N/A
	270	90.1	4.35	I2TMPH-02BAE4CD	04GT	N/A

**Notes:** When selected, 24VDC brakes are standard for I2TMPH AC servo motors. Contact a local source for 24VDC power supplies. Motor power and encoder cables are factory pre-wired with approximately 13” lead length with heavy duty mating connectors. Contact your supplier for mating connectors and/or various cable lengths.

\* Reference the speed/torque (force) curves for performance with the applied system voltage and phase(s). More detailed I2TDG amplifier specifications and dimensions are available in the I2T catalog on pages 95 to 99.

## I2TMGH – AC Servomotor & Amplifier Selector:

Description	Peak Torque* (in-lb)	Rated Torque* (in-lb)	Motor Inertia (in-lb - s <sup>2</sup> x10 <sup>-3</sup> )	Motor Model	Amplifier Model – I2TDG Analog/Digital Input
400V 17-Bit Incremental Encoder Straight Shaft with Keyway 3000rpm* Max. MS Connectors	79	25	6.41	I2TMGH-05ACA61	10GT*
	79	25	8.26	I2TMGH-05ACA6C	10GT*
	122	48	12.30	I2TMGH-09ACA61	10GT*
	122	48	14.15	I2TMGH-09ACA6C	10GT*
	207	74	18.2	I2TMGH-13ACA61	15GT*
	207	74	20.1	I2TMGH-13ACA6C	15GT*

**Notes:** When selected, 24VDC brakes are standard for I2TMGH AC servo motors. Contact a local source for 24VDC power supplies. Contact your supplier for more specific technical information.

- \* The speed/torque specifications listed above are achievable when applied with 200V, 3-phase systems. Reference the speed/torque (force) curves for performance with any other applied voltages and phase(s). More detailed I2TDG amplifier specifications and dimensions are available in the I2T catalog on pages 95 to 99.

## I2TMPH – Servomotor & Amplifier Selector:

Description	Peak Torque* (oz-in)	Rated Torque* (oz-in)	Motor Inertia (oz-in - s <sup>2</sup> x10 <sup>-3</sup> )	Motor Model	Amplifier Model – I2TDH	
					200V 1-Phase	200V 3-Phase
200V 13-Bit Incremental Encoder Straight Shaft with Keyway 5000rpm Pre-wired with Heavy-duty Connectors	135	45.1	0.917	I2TMPH-01AAE41D	01AE	N/A
	135	45.1	1.46	I2TMPH-01AAE4CD	01AE	N/A
	270	90.1	2.96	I2TMPH-02AAE41D	02AE	N/A
	270	90.1	4.35	I2TMPH-02AAE4CD	02AE	N/A
	542	181	4.92	I2TMPH-04AAE41D	04AE	N/A
	542	181	6.31	I2TMPH-04AAE4CD	04AE	N/A
	1010	338	29.9	I2TMPH-08AAE41D	08AE-S	08AE
	1010	338	35.7	I2TMPH-08AAE4CD	08AE-S	08AE
	2027	676	57.1	I2TMPH-15AAE41D	15AE-S	15AE
	2027	676	67.8	I2TMPH-15AAE4CD	15AE-S	15AE
100V, 1-Phase 13-Bit Incremental Encoder Straight Shaft with Keyway 5000rpm Pre-wired with Heavy-duty Connectors	135	45.1	0.917	I2TMPH-01BAE41D	01BE	N/A
	135	45.1	1.46	I2TMPH-01BAE4CD	01BE	N/A
	270	90.1	2.96	I2TMPH-02BAE41D	02BE	N/A
	270	90.1	4.35	I2TMPH-02BAE4CD	02BE	N/A

**Notes:** When selected, 24VDC brakes are standard for I2TMPH servo motors. Contact a local source for 24VDC power supplies. Motor power and encoder cables are factory pre-wired with approximately 13” lead length with heavy-duty mating connectors. Contact your supplier for mating connectors and/or various cable lengths.

\* For more detailed I2TDH amplifier specifications and dimensions, refer to pages 93 through 122 in the I2T catalog.

## I2TMGH – 230V AC Servomotor & Amplifier Selector:

Description	Peak Torque* (in-lb)	Rated Torque* (in-lb)	Motor Inertia (in-lb - s <sup>2</sup> x10 <sup>-3</sup> )	Motor Model	Amplifier Model – I2TDH Analog/Digital Input
200V, 3-phase 17-Bit Incremental Encoder Straight Shaft with Keyway 3000rpm Max.** MS Connectors	79	25	6.41	I2TMGH-05ACA61	05AE
	79	25	8.26	I2TMGH-05ACA6C	05AE
	122	48	12.30	I2TMGH-09ACA61	10AE
	122	48	14.15	I2TMGH-09ACA6C	10AE
	207	74	18.2	I2TMGH-13ACA61	15AE
	207	74	20.1	I2TMGH-13ACA6C	15AE
	254	102	28.1	I2TMGH-20ACA61	20AE
	254	102	35.9	I2TMGH-20ACA6C	20AE
	404	165	40.7	I2TMGH-30ACA61	30AE
	404	165	48.5	I2TMGH-30ACA6C	30AE
	630	252	59.8	I2TMGH-44ACA61	50AE
	630	252	67.6	I2TMGH-44ACA6C	50AE
	776	310	78.8	I2TMGH-55ACA61	60AE***
	776	310	86.6	I2TMGH-55ACA6C	60AE***
	1050	425	111	I2TMGH-75ACA61	75AE***
	1050	425	119	I2TMGH-75ACA6C	75AE***
	1550	620	249	I2TMGH-1AACA61	1AAE***
	1550	620	267	I2TMGH-1AACA6C	1AAE***
	1988	845	279	I2TMGH-1EACA61	1EAE***
	1988	845	309	I2TMGH-1EACA6C	1EAE***

**Notes:** When selected, 24VDC brakes are standard for I2TMGH servo motors. Contact a local source for 24VDC power supplies. Contact your supplier for more specific technical information.

- \* More detailed I2TDH amplifier specifications and dimensions are available in the I2T catalog on pages 93 to 122.
- \*\* 2000rpm maximum for 11 and 15kW systems only.
- \* \*\* Requires a Regenerative Unit.

## I2TMGH – 460V AC Servomotor & Amplifier Selector:

Description	Peak Torque (in-lb)	Rated Torque (in-lb)	Motor Inertia (in-lb - s <sup>2</sup> x10 <sup>-3</sup> )	Motor Model	Amplifier Model – I2TDH Analog/Digital Input
400V, 3-phase 17-Bit Incremental Encoder Straight Shaft with Keyway 3000rpm Max.** MS Connectors	79	25	6.41	I2TMGH-05DCA61	05DE
	79	25	8.26	I2TMGH-05DCA6C	05DE
	122	48	12.30	I2TMGH-09DCA61	10DE
	122	48	14.15	I2TMGH-09DCA6C	10DE
	207	74	18.2	I2TMGH-13DCA61	15DE
	207	74	20.1	I2TMGH-13DCA6C	15DE
	254	102	28.1	I2TMGH-20DCA61	20DE
	254	102	35.9	I2TMGH-20DCA6C	20DE
	404	165	40.7	I2TMGH-30DCA61	30DE
	404	165	48.5	I2TMGH-30DCA6C	30DE
	630	252	59.8	I2TMGH-44DCA61	50DE
	630	252	67.6	I2TMGH-44DCA6C	50DE
	776	310	78.8	I2TMGH-55DCA61	60DE***
	776	310	86.6	I2TMGH-55DCA6C	60DE***
	1050	425	111	I2TMGH-75DCA61	75DE***
	1050	425	119	I2TMGH-75DCA6C	75DE***
	1550	620	249	I2TMGH-1ADCA61	1ADE***
	1550	620	267	I2TMGH-1ADCA6C	1ADE***
	1988	845	279	I2TMGH-1EDCA61	1EDE***
	1988	845	309	I2TMGH-1EDCA6C	1EDE***

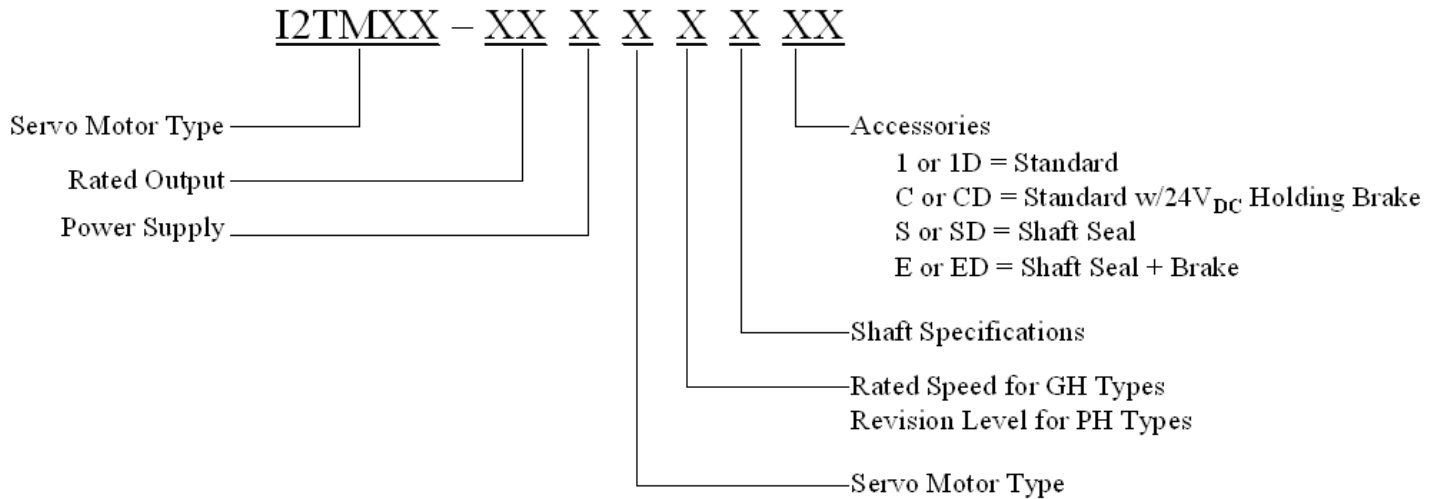
**Notes:** When selected, 24VDC brakes are standard for I2TMGH servo motors. Contact a local source for 24VDC power supplies. Contact your supplier for more specific technical information.

\* More detailed I2TDH amplifier specifications and dimensions are available in the I2T catalog on pages 149 to 170.

\*\* 2000rpm maximum for 11 and 15kW systems only.

\*\*\* Requires a Regenerative Unit

## I2TMXX – Motor Ordering Code Matrix:



**Note:** The final X or the final two X's in the code represent accessories ordered with the motor. Typically, a single designator (i.e., 1, C, S, or E) applies to the GH type motor, while the PH type motors are designated with two characters (i.e., 1D, CD, SD, or ED).