

# Transformers

## TM Series Transformer Modules

Provides AC or DC bus supply voltages for up to four Aerotech controllers

300 watts max power output (TM3); 500 watts max power output (TM5)

Auxiliary supply outputs for powering up to four additional products



TM3 (left) and TM5 transformer modules.

### TM3 Transformer Module

The TM3 transformer module provides and distributes isolated AC and/or DC bus supply voltages for up to four Aerotech controllers. It is configured at the factory to provide 28 VAC, 56 VAC, 115 VAC, 40 VDC, 80 VDC, or 160 VDC with a maximum transformer output power capability of 300 watts.

Additionally, the TM3 provides auxiliary supply outputs for powering the auxiliary power inputs of up to four Aerotech products. The TM3 also includes a 24 VDC power supply that provides the user with 24 VDC output with a current capacity of up to 0.9 amp. Other features of the TM3 include a soft-start circuit to limit inrush current and a voltage selector that can be configured for AC input voltages of 100 VAC, 115 VAC, 200 VAC, or 230 VAC.

### TM5 Transformer Module

The TM5 transformer module is used to provide and distribute isolated AC bus supply voltages for up to four Aerotech controllers. It is configured at the factory to provide 28 VAC, 56 VAC, 115 VAC, or a combination of these voltages with a total output power capability of 500 watts. Additionally, the TM5 distributes the applied AC line voltage to each of the auxiliary supply outputs for powering the auxiliary power inputs of other Aerotech products. The TM5 may also be purchased with the 24 VDC power supply option that provides the user with 24 VDC output with a current capacity of up to 1 amp.

| Model                                       | TM3  | TM5  |
|---|--|--|
| Type  | Isolation  |  |
| AC Input Configurations                     | 100 VAC, 115 VAC, 200 VAC, 230 VAC   |  |
| Peak AC Input Inrush Current                | 32 A <sub>pk</sub>   | 200 A <sub>pk</sub>  |
| Operating Frequency                         | 50/60 Hz   |  |
| Maximum Continuous Transformer Output Power | 300 watts max @ 20°C   | 500 watts max @ 20°C   |
| Peak Transformer Output Power               | 400 watts max @ 20°C   | 800 watts max @ 20°C   |
| Short Circuit/Over Current Protection       | AC input 10 A breaker/switch (supplementary protection only); 100 VAC/115 VAC configurations contain 4 A slow-blow fuse connected to transformer primary winding; 200 VAC/230 VAC configurations contain 3 A slow-blow fuse connected to transformer primary winding | AC input 10 A breaker/switch (supplementary protection only); 100 VAC/115 VAC configurations contain 8 A slow-blow fuse connected to transformer primary winding; 200 VAC/230 VAC configurations contain 4 A slow-blow fuse connected to transformer primary winding |
| Thermal Protection                          | Integral transformer thermal switch is normally closed. Thermal switch opens when internal temperature of transformer reaches 110°C.   | Integral transformer thermal switch is normally closed. Thermal switch opens when internal temperature of transformer reaches 110°C.   |
| Secondary Winding Configuration             | 28 VAC (40 VDC bus); 56 VAC (80 VDC bus)<br>±10 VDC, ±20 VDC, ±30 VDC, ±40 VDC   | 28 VAC (40 VDC bus); 56 VAC (80 VDC bus);<br>112 VAC (160 VDC bus)   |
| +24 VDC Output                              | 0.9 A max  | 0.9 A max  |



## TM3/5 Series ORDERING INFORMATION

### Ordering Example

| TM3  | -A           | -80VDC        | -80VDC        | -NO SPLIT  | -PS24-1      |
|------|--------------|---------------|---------------|------------|--------------|
| Base | Line Voltage | Bus Voltage 1 | Bus Voltage 2 | Axis Split | Power Supply |
| TM3  | -A           | -80 VDC       | -80 VDC       | -2-2       | -PS24-1      |
|      | -B           | -56 VAC       | -56 VAC       | -NO SPLIT  |              |
|      | -C           | -40 VDC       | -40 VDC       |            |              |
|      | -D           | -28 VAC       | -28 VAC       |            |              |
| TM5  | -A           | -115 VAC      | -115 VAC      | -1-3       | -PS24-1      |
|      | -B           | -56 VAC       | -56 VAC       | -2-2       |              |
|      | -C           | -28 VAC       | -28 VAC       | -3-1       |              |
|      | -D           | -56 VAC CT    | -56 VAC CT    | -NO SPLIT  |              |

### TM3/TM5 Transformers

|     |  |
|-----|--|
| TM5 | 0.5 kVA isolation transformer in enclosure with power switch, 4 AC voltage motor power outputs and aux power connections       |
| TM3 | 0.3 kVA isolation transformer in enclosure with power switch, 4 AC or DC voltage motor power outputs and aux power connections |

### Line Voltage

|    |             |
|----|-------------|
| -A | 115 VAC     |
| -B | 230 VAC     |
| -C | 100 VAC     |
| -D | 200/208 VAC |

### Bus Voltage (Vbus1)

|           |   |
|-----------|---|
| -115VAC   | 115 VAC (for 160 VDC bus); TM5 only                       |
| -56VAC    | 56 VAC (for 80 VDC bus)                                   |
| -28VAC    | 28 VAC (for 40 VDC bus)                                   |
| -56VAC CT | 56 VAC center tap for Ensemble CL drives (for 40 VDC bus) |
| -80VDC    | 80 VDC (for input to MP drives); TM3 only                 |
| -40VDC    | 40 VDC (for input to MP drives); TM3 only                 |

### Bus Voltage (Vbus2)

|           |   |
|-----------|---|
| -115VAC   | 115 VAC (for 160 VDC bus)                                 |
| -56VAC    | 56 VAC (for 80 VDC bus)                                   |
| -28VAC    | 28 VAC (for 40 VDC bus)                                   |
| -56VAC CT | 56 VAC center tap for Ensemble CL drives (for 40 VDC bus) |
| -80VDC    | 80 VDC (for input to MP drives); TM3 only                 |
| -40VDC    | 40 VDC (for input to MP drives); TM3 only                 |

### Axis Split (Vbus1 - Vbus2)

|           |   |
|-----------|---|
| -1-3      | Axis 1 Vbus 1; Axis 2,3,4 Vbus 2                      |
| -2-2      | Axis 1,2 Vbus 1; Axis 3,4 Vbus 2                      |
| -3-1      | Axis 1,2,3 Vbus 1; Axis 4 Vbus 2                      |
| -NO SPLIT | Vbus 1 and Vbus 2 ties together and wired to all axes |

### Optional Power Supply

|         |  |
|---------|--|
| -PS24-1 | 24 VDC, 1 amp power supply for brake control |
|---------|--|

### Optional Brake Cable (Only selected when /PS24-1 is selected)

|         |   |
|---------|---|
| -C24-06 | 6DM (2 ft) 2 conductor brake cable with flying leads  |
| -C24-09 | 9DM (3 ft) 2 conductor brake cable with flying leads  |
| -C24-12 | 12DM (4 ft) 2 conductor brake cable with flying leads |
| -C24-15 | 15DM (5 ft) 2 conductor brake cable with flying leads |
| -C24-18 | 18DM (6 ft) 2 conductor brake cable with flying leads |

**TM3/5 Series ORDERING INFORMATION****/CABLE1/CABLE2/CABLE3/CABLE4**


---

|     |              |
|-----|--------------|
| -C1 | Cable AXIS 1 |
| -C2 | Cable AXIS 2 |
| -C3 | Cable AXIS 3 |
| -C4 | Cable AXIS 4 |

**Cable Type**


---

|     |                   |
|-----|-------------------|
| -AB | Bus and Aux Power |
| -B  | Bus Only          |

**Standard Cable Lengths**


---

|     |             |
|-----|-------------|
| -06 | 6DM (2 ft)  |
| -09 | 9DM (3 ft)  |
| -12 | 12DM (4 ft) |
| -15 | 15DM (5 ft) |
| -18 | 18DM (6 ft) |

**LINECORD**


---

|              |                                |
|--------------|--------------------------------|
| -ENGLAND     | U.K. compatible line cord      |
| -GERMANY     | German compatible line cord    |
| -ISRAEL      | Israel compatible line cord    |
| -INDIA       | India compatible line cord     |
| -AUSTRALIA   | Australia compatible line cord |
| -US-115VAC   | U.S. 115 VAC line cord         |
| -US-230VAC   | US 230 VAC line cord           |
| -NO-LINECORD | No line cord                   |