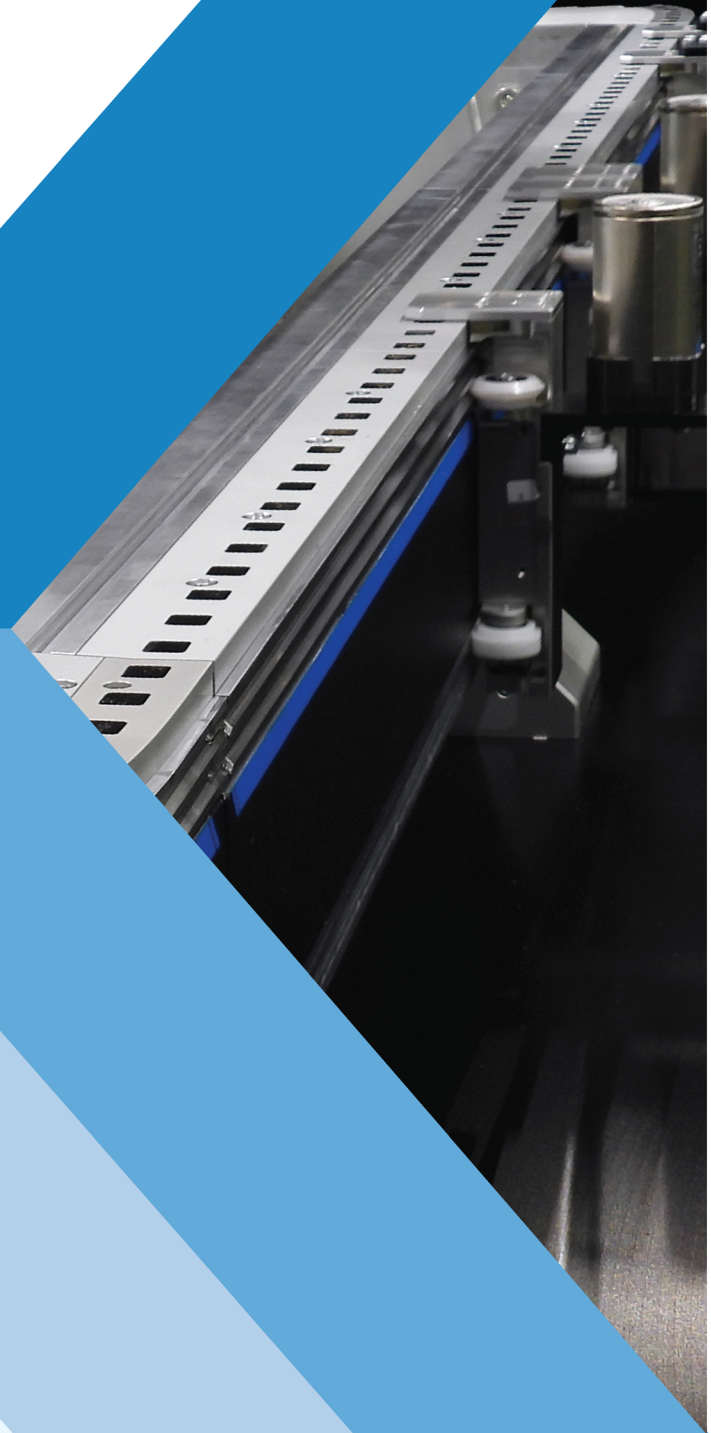


# SuperTrak HORIZON3™

## Component Data Sheets

Rev. 1 , April 2025



The Foundation of World Leading Automation

## **NOTICES**

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### **GRAPHICS**

All drawings, illustrations, and photographs included in this document are provided to expand and enhance the text. These graphics are representations only and are not necessarily drawn to scale. For accurate drawings, see the *Mechanical Drawing Package* and *Electrical*

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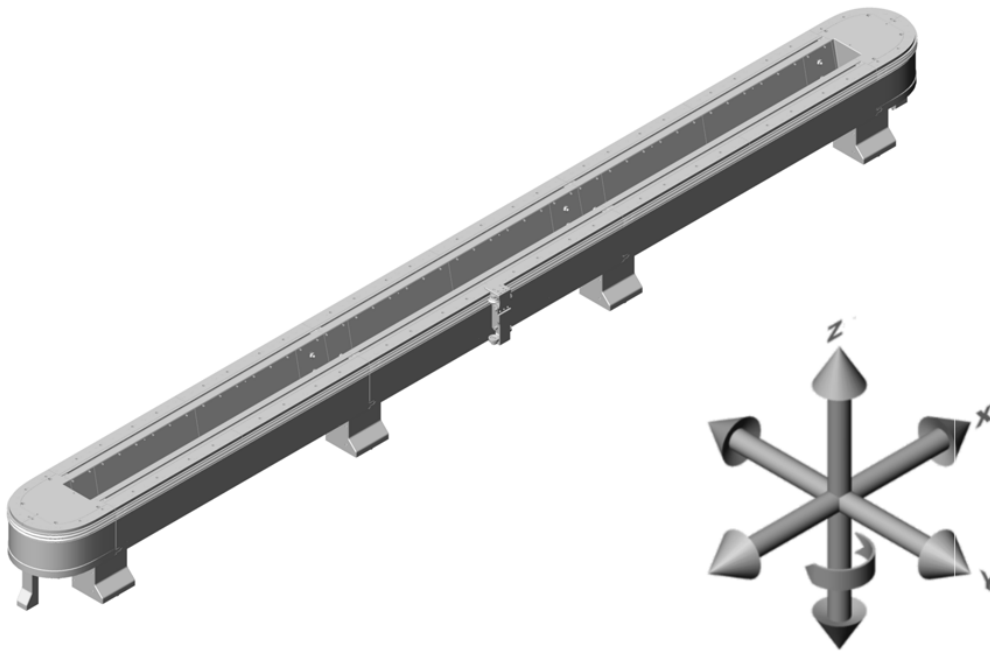
## Notes

*This document provides information about SuperTrak HORIZON3™ components. Information found here is for general reference and may be updated without notice. Be sure you are using the most current version of this document by going to <https://supertrakconveyance.com/technical-documentation/>. More information about the SuperTrak CONVEYANCE™ Platform can be found in the Operation and Maintenance Manual which is also available through the link referenced above.*

*For information about spare parts, consult our spare lists on our website. For a spare parts list specific to your SuperTrak HORIZON3™ system, contact us at [spares@supertrakconveyance.com](mailto:spares@supertrakconveyance.com).*

## Frame of Reference

This document describes tooling movement using the following frame of reference:



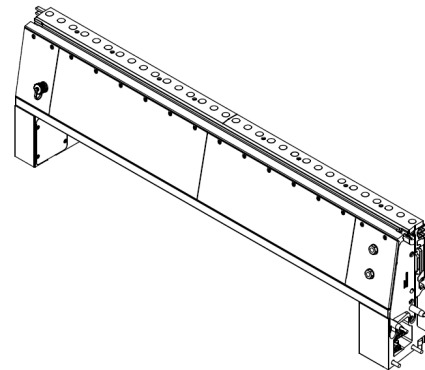
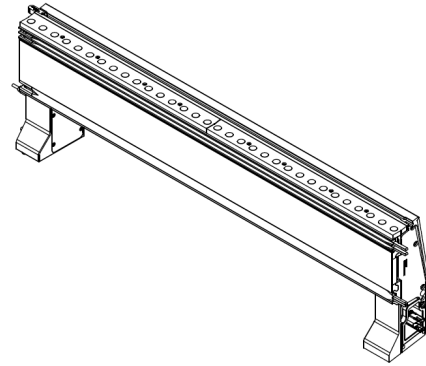
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## Straight Section Data Sheet

The straight section generates and regulates the electromagnetic field for the shuttles.

### Features

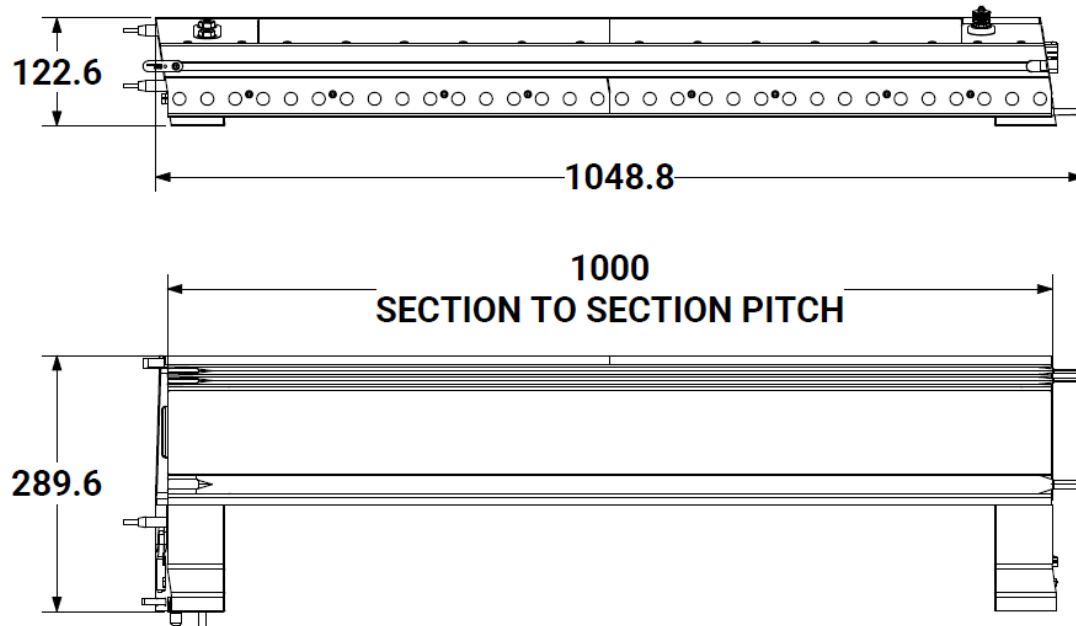
- Bevels/tapers on the upper v-rail overlap at SuperTrak conveyance platform section transitions to provide a smooth, low-vibration transport surface for shuttles.
- Includes:
  - Encoders for contact-free position tracking of shuttles
  - Two (2) stands for stable mounting on a frame and smooth height adjustment
  - Electrical interconnect
- Electronics accessible by removing back cover
- Easy removal of motor and electronics from the front side
- Requires minimal maintenance (weekly cleaning of the flat wear strip)



### Part Numbers

| Part                                          | Part Number           |
|-----------------------------------------------|-----------------------|
| Straight section                              | H3-L1000-HRID-IP55    |
| Straight section with active (liquid) cooling | H3-L1000-HRID-IP55-LQ |

## Dimensions



Dimensions for reference only. See SuperTrak Design Package for detailed drawings.

## Technical Specifications

| Specification                 | Value                                                                                      |
|-------------------------------|--------------------------------------------------------------------------------------------|
| 24V digital bus FLA           | 2.0A                                                                                       |
| Accelerating force (max.)     | 115N                                                                                       |
| Material                      | Aluminum anodized, steel, polycarbonate (PC), epoxy resin, EPDM foam, Buna-N rubber        |
| FLA (Amps) on 48VDC motor bus | <ul style="list-style-type: none"> <li>Peak: 50A</li> <li>Average: 14A</li> </ul>          |
| Voltage                       | <ul style="list-style-type: none"> <li>48 VDC (motor)</li> <li>24 VDC (digital)</li> </ul> |
| Approximate weight            | <ul style="list-style-type: none"> <li>31 kg (68 lbs)</li> </ul>                           |

## Straight Section Certifications

| Region                             | Regulatory Standard Application | Description                                                                                                                    |
|------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| North America<br>Safety - OSHA/SCC | UL 61800-5-1                    | Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical, Thermal and Energy               |
|                                    | UL508                           | Standard for Industrial Control Equipment                                                                                      |
|                                    | CSA C22.2 No. 14                | Industrial control equipment                                                                                                   |
| North America<br>EMI-OSHA/SCC      | FCC part 15 subpart b           | Unintentional Radiators                                                                                                        |
|                                    | ICES-003                        | Information Technology Equipment (including Digital Apparatus)                                                                 |
| Europe<br>Low Voltage Directive    | EN 61800-5-1                    | Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical, Thermal and Energy               |
|                                    | EN 619                          | Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of unit loads    |
|                                    | EN 60204-1                      | Safety of machinery – Electrical equipment of machines – Part 1: General requirements                                          |
| Europe<br>EMC Directive            | EN 61800-3                      | Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools |
|                                    | EN 61000-6-2                    | Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments              |
|                                    | EN 61000-6-4                    | Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments              |

For detailed information on SuperTrak component certifications, visit  
<https://supertrakconveyance.com/certifications/>

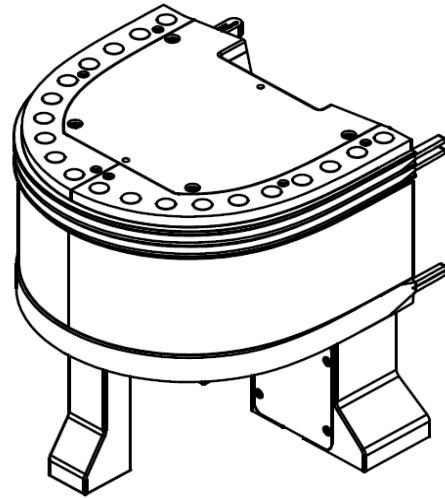
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## 180 Deg. (Curved) Section Data Sheet

The 180 deg. section generates and regulates the electromagnetic field for the shuttles.

### Features

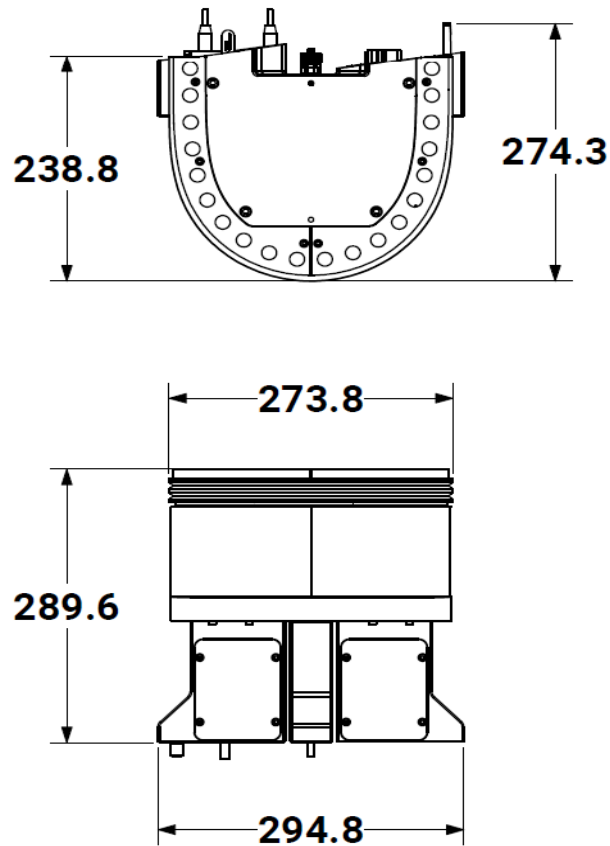
- Bevels on the upper v-rail overlap at SuperTrak conveyance platform section transitions to provide a smooth, low-vibration transport surface for shuttles.
- Includes:
  - Encoders for contact-free position tracking of shuttles
  - Accessible electronic box by removing a cover
- Requires minimal maintenance (weekly cleaning of the flat riding strip)



### Part Number

| Part                                          | Part Number          |
|-----------------------------------------------|----------------------|
| 180 deg. section                              | H3-D300-HRID-IP55    |
| 180 deg. section with active (liquid) cooling | H3-D300-HRID-IP55-LQ |

## Dimensions



*Dimensions for reference only. See SuperTrak Design Package for detailed drawings.*

## Technical Specifications

| Specification       | Value                                                                                    |
|---------------------|------------------------------------------------------------------------------------------|
| 24V digital bus FLA | 2.0A                                                                                     |
| Acceleration        | See <a href="#">Shuttle Average Acceleration vs. Payload</a> on page 20.                 |
| Material            | Aluminum anodized, steel, polycarbonate (PC), epoxy resin, EPDM foam, Buna-N rubber      |
| Voltage             | <ul style="list-style-type: none"> <li>48VDC (motor)</li> <li>24VDC (digital)</li> </ul> |
| Approximate weight  | 25 kg (55 lbs)                                                                           |

## 180 Deg. Section Certifications

| Region                             | Regulatory Standard Application | Description                                                                                                                    |
|------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| North America<br>Safety - OSHA/SCC | UL 61800-5-1                    | Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical, Thermal and Energy               |
|                                    | UL508                           | Standard for Industrial Control Equipment                                                                                      |
|                                    | CSA C22.2 No. 14                | Industrial control equipment                                                                                                   |
| North America<br>EMI-OSHA/SCC      | FCC part 15 subpart b           | Unintentional Radiators                                                                                                        |
|                                    | ICES-003                        | Information Technology Equipment (including Digital Apparatus)                                                                 |
| Europe<br>Low Voltage Directive    | EN 61800-5-1                    | Adjustable Speed Electrical Power Drive Systems - Part 5-1: Safety Requirements - Electrical, Thermal and Energy               |
|                                    | EN 619                          | Continuous handling equipment and systems - Safety and EMC requirements for equipment for mechanical handling of unit loads    |
|                                    | EN 60204-1                      | Safety of machinery – Electrical equipment of machines – Part 1: General requirements                                          |
| Europe<br>EMC Directive            | EN 61800-3                      | Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools |
|                                    | EN 61000-6-2                    | Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments              |
|                                    | EN 61000-6-4                    | Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments              |

For detailed information on SuperTrak component certifications, visit  
<https://supertrakconveyance.com/certifications/>

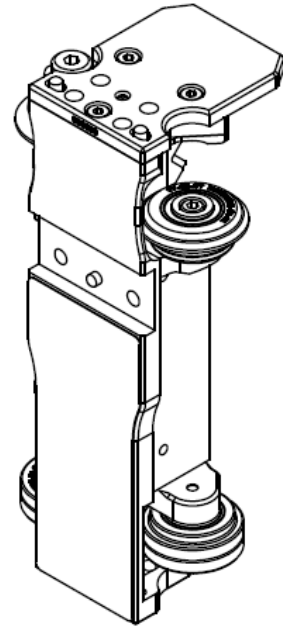
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## Shuttle Data Sheet

The shuttle provides low friction transport with precise product positioning.

### Features

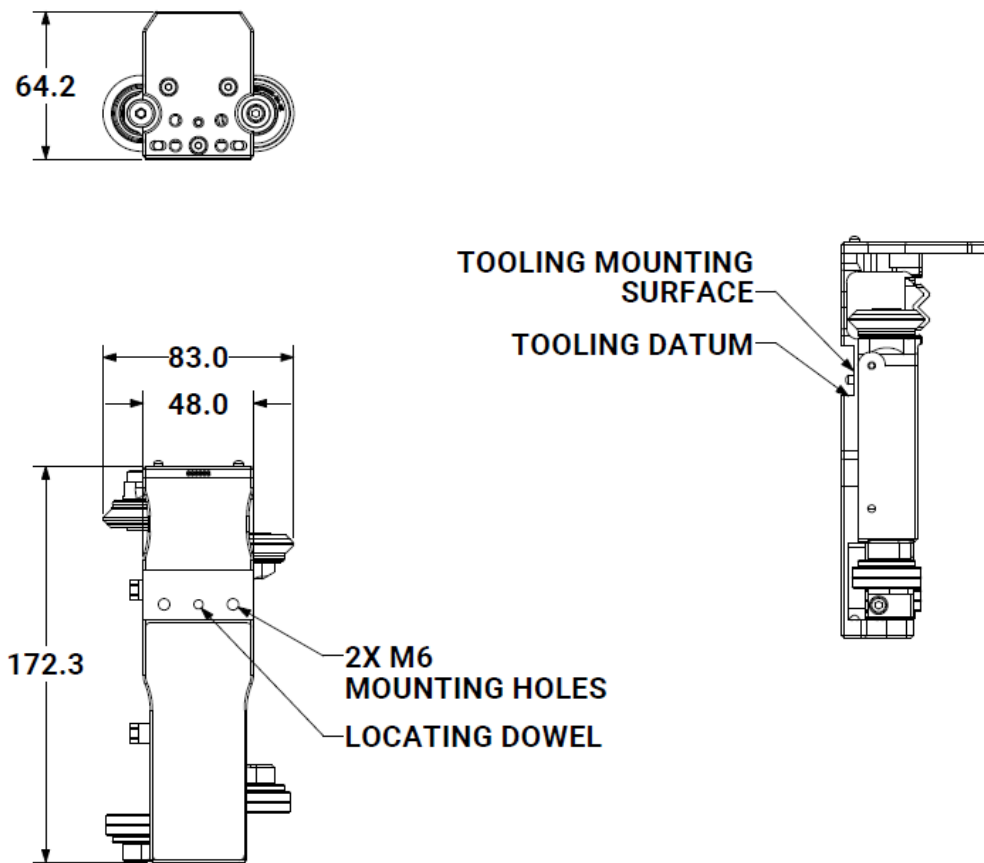
- Variable load is centered by the v-wheels.
- Includes:
  - A keeper plate assembly that, when installed, shields the magnetic field of the magnets when the shuttle is not installed on the SuperTrak conveyance platform.
  - Holes and recesses for mounting a custom shuttle shelf.
- Requires minimal maintenance (felt lubrication, monthly inspection, and cleaning).



### Part Number

| Part             | Part Number   |
|------------------|---------------|
| Shuttle assembly | H3V3-S50-HRID |

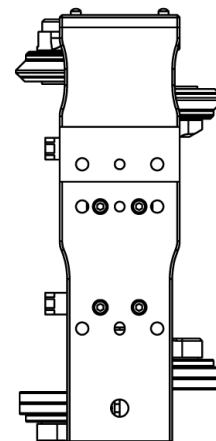
## Dimensions



*Dimensions for reference only. See SuperTrak Design Package for detailed drawings.*

Mounting holes and locating dowel shown above are the primary recommended location for mounting. Additional tool mounting holes are available:

- on the top of the shuttle, as pictured above.
- on the front face of the shuttle, as pictured at right (under a removal cover).

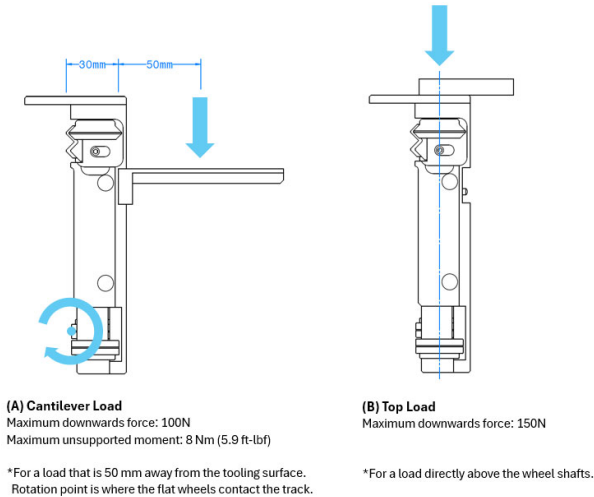


## Technical Specifications

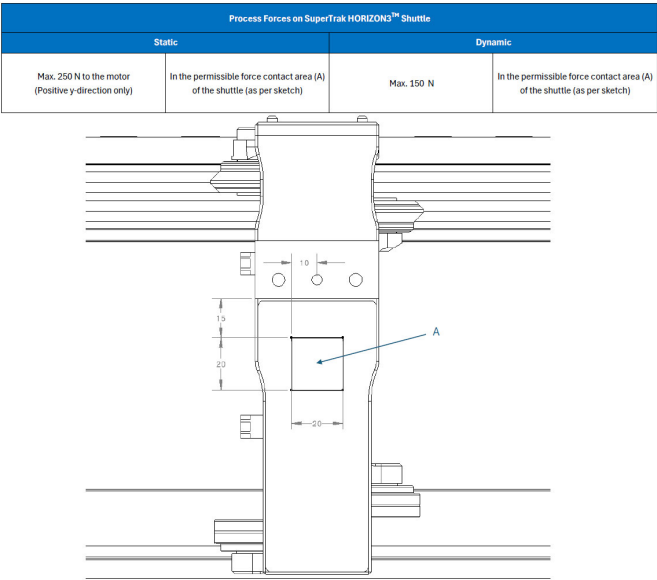
| Specification                                                                                                                           | Applicable For            | Value                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Acceleration (max.)                                                                                                                     | 1 kg (2.20lb) payload     | Straight section: 30 m/s <sup>2</sup> (98.4 ft./s <sup>2</sup> )<br>Curved section: 20 m/s <sup>2</sup> (65.6 ft./s <sup>2</sup> )<br>See <a href="#">Shuttle Average Acceleration vs. Payload</a> on page 20.               |
|                                                                                                                                         | 3 kg (6.61lb) payload     | Straight section: 10 m/s <sup>2</sup> (32.8 ft./s <sup>2</sup> )<br>Curved section: 5 m/s <sup>2</sup> (16.4 ft./s <sup>2</sup> )<br>See <a href="#">Shuttle Average Acceleration vs. Payload</a> on page 20.                |
| Material                                                                                                                                | Shuttles                  | <ul style="list-style-type: none"> <li>Metals - aluminum, steel, stainless steel</li> <li>Plastics - acetal</li> <li>Misc - wool felt, mineral oil, neodymium, rubber, magnetic elastomer, polycarbonate+adhesive</li> </ul> |
| Maximum unsupported process torque perpendicular to shuttle motion <sup>a</sup>                                                         | Straight sections         | 8 N-m (5.90 ft.-lbf)                                                                                                                                                                                                         |
|                                                                                                                                         | 180 deg. section          | 5.6 N-m (4.13 ft.-lbf)                                                                                                                                                                                                       |
| Maximum unsupported process force above the wheel shafts <sup>a</sup>                                                                   | Straight sections         | 150 N (33.72 ft.-lbf)                                                                                                                                                                                                        |
|                                                                                                                                         | 180 deg. section          | 100 N (22.48 ft.-lbf)                                                                                                                                                                                                        |
| Maximum application force applied to shuttle <sup>b</sup>                                                                               | Shuttles                  | Static (on +Y direction): 250 N (56.2 lbf)<br>Dynamic: 150 N (33.7 lbf)                                                                                                                                                      |
| Minimum pitch from center-to-center of two (2) shuttles (as measured along the flat rail)                                               | Straight section          | 50 mm (1.97 in.)                                                                                                                                                                                                             |
| Minimum pitch from center-to-center of two (2) shuttles (as measured along the flat rail on the constant curvature section at the apex) | 180 deg section           | 65 mm (2.56 in.)                                                                                                                                                                                                             |
| Payload <sup>c</sup>                                                                                                                    | Shuttles                  | See <a href="#">Shuttle Average Acceleration vs. Payload</a> on page 20.                                                                                                                                                     |
| Repeatability <sup>d</sup>                                                                                                              | Straight section (X-axis) | ±0.01 mm (±0.00039 in.)                                                                                                                                                                                                      |
|                                                                                                                                         | Curved sections (X-axis)  | ±0.025 mm (±0.00098 in.)                                                                                                                                                                                                     |
| Speed (max.) <sup>e</sup>                                                                                                               | Standard straight section | 4 m/s (13.1 ft./s)                                                                                                                                                                                                           |
|                                                                                                                                         | Standard Curved section   | 4 m/s (13.1 ft./s)                                                                                                                                                                                                           |

| Specification                 | Applicable For | Value              |
|-------------------------------|----------------|--------------------|
| Weight (without keeper plate) | Shuttles       | 0.54 kg (1.19 lbs) |
| Weight (with keeper plate)    | Shuttles       | 0.59 kg (1.29 lbs) |

- a. Includes process force, product fixture mass, and product mass. The rotation point for the moment load is calculated from the flat wheels for downward forces.



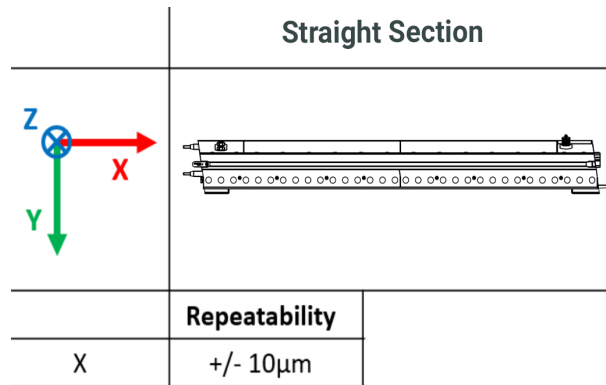
- b. The graphic at right illustrates the calculation of the maximum application force on a shuttle.



- c. Payload is the mass of the tooling and parts added to the base shuttle and does not include the weight of the base shuttle itself. For example, if you weighed the whole shuttle and it came to 2kg, considering the formula below:  
 $(\text{Payload Weight}) = (\text{Total Weight}) - (\text{Shuttle Weight})$   
The payload would be  $1.46\text{kg} = 2\text{kg} - 0.54\text{kg}$

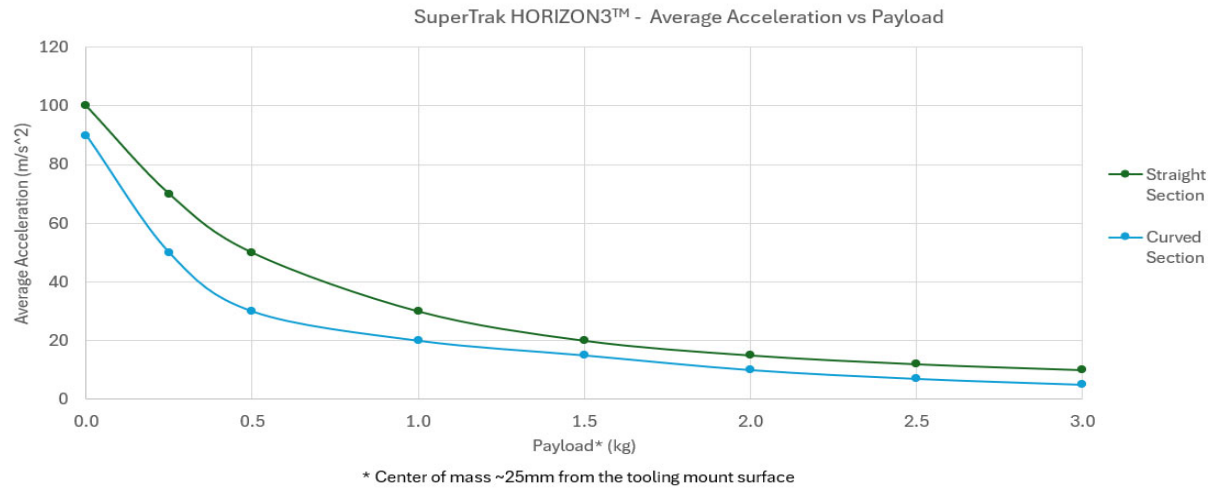
d.Values listed in table are for a single shuttle, not shuttle-to-shuttle. The X-axis repeatability for straight sections is defined in the graphic at right.

Repeatability is higher where shuttle wheels are in the rail joints.

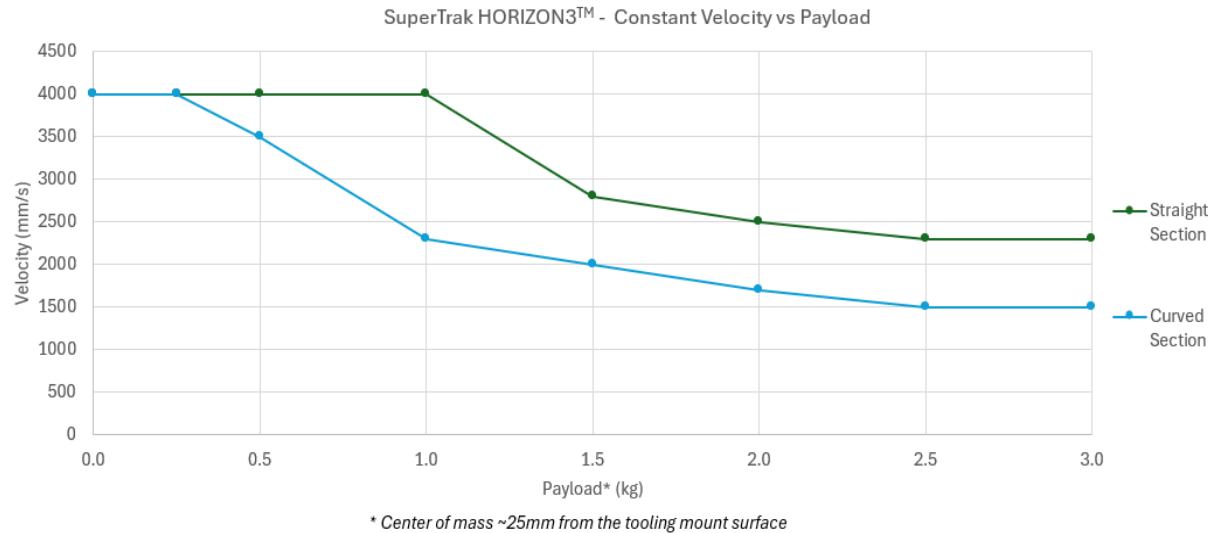


e.Speed around curved sections is mass dependent.

Shuttle Average Acceleration vs. Payload



Shuttle Velocity vs. Payload

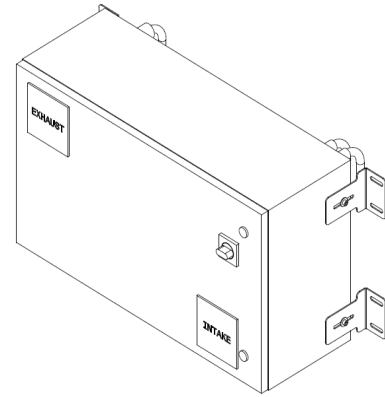


## Control Panel Data Sheet

The control panel provides AC power distribution and shuttle control for the SuperTrak HORIZON3™ system.

### Features

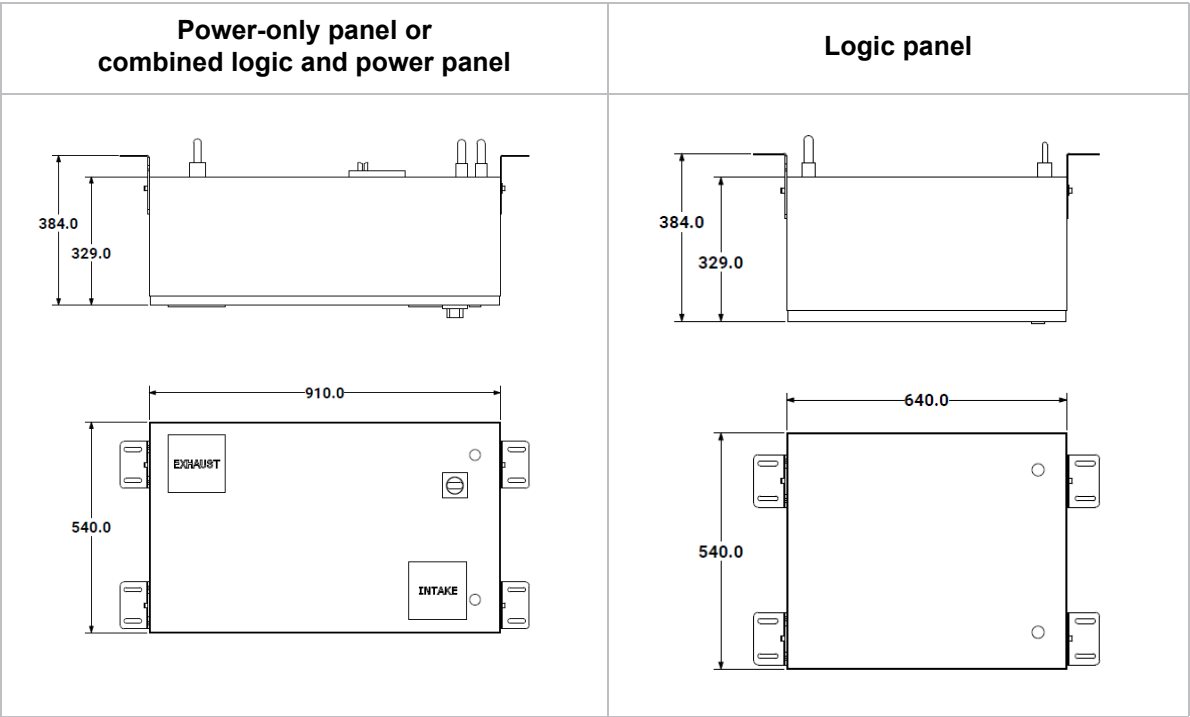
- Integration with the automation system safety circuit utilizes dual channel input with a feedback loop via provided terminals.
- Available in two (2) line voltage options:
  - 400Y230 VAC
  - 208Y120 VAC
- Available in two panel configurations:
  - Combined logic and power panel (pictured at right)
  - Split logic and power panel
- Includes:
  - An uninterruptible power supply (UPS)
  - Filtered cooling fan and air exhaust
  - An open interface to programmable logic controller (PLC): PROFINET, EtherNet/IP, or EtherCAT



### Part Numbers

| Panel Option   | Part Number        | Description                                                           |
|----------------|--------------------|-----------------------------------------------------------------------|
| Combined panel | H3V3-CBN-EU-SI-1PH | European voltage 400Y230VAC, SIMATIC, single-phase power supply       |
|                | H3V3-CBN-NA-SI-1PH | North American voltage 208Y120VAC, SIMATIC, single-phase power supply |
| Power panel    | H3V3-PWR-EU-1PH    | European voltage 400Y230VAC, single-phase power supply                |
|                | H3V3-PWR-NA-1PH    | North American voltage 208Y120VAC, single-phase power supply          |
| Logic panel    | H3V3-LGC-AD        | Advantech IPC platform panel (generic)                                |
|                | H3V3-LGC-SI        | Siemens SIMATIC IPC control panel                                     |

Dimensions



*Dimensions for reference only. See SuperTrak Design Package for detailed drawings.*

## Technical Specifications

| Specification                | Value                                               |
|------------------------------|-----------------------------------------------------|
| Control voltage              | 24VDC                                               |
| Frequency                    | 50/60 Hz                                            |
| Full load amps               | 36A                                                 |
| Largest load                 | 10A                                                 |
| Line voltage                 | 400Y230VAC+PE (EU)<br>208Y120VAC+PE (North America) |
| Materials                    | Steel sheet, lacquered, RAL7024, polyamide (PA)     |
| Phases                       | 3 ph, 5-wire (L1, L2, L3+N+PE)                      |
| Short circuit current rating | 5kA                                                 |
| Approximate Weight           | Combined Panel: 70 kg (154.3 lbs)                   |

## Control Panel Certifications

| Region                             | Regulatory Standard Application | Description                                                                                                                             |
|------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| North America<br>Safety - OSHA/SCC | UL 508A                         | Industrial Control Panels                                                                                                               |
|                                    | CSA C22.2 No. 14                | Industrial control equipment                                                                                                            |
| North America<br>EMI-OSHA/SCC      | FCC part 15 subpart b           | Unintentional Radiators                                                                                                                 |
|                                    | ICES-003                        | Information Technology Equipment<br>(including Digital Apparatus)                                                                       |
| Europe<br>Low Voltage Directive    | EN 60204-1                      | Safety of machinery – Electrical equipment<br>of machines – Part 1: General requirements                                                |
| Europe<br>EMC Directive            | EN 61800-3                      | Adjustable speed electrical power drive<br>systems - Part 3: EMC requirements and<br>specific test methods for PDS and machine<br>tools |
|                                    | EN 61000-6-2                    | Electromagnetic compatibility (EMC) - Part<br>6-2: Generic standards - Immunity standard<br>for industrial environments                 |
|                                    | EN 61000-6-4                    | Electromagnetic compatibility (EMC) - Part<br>6-4: Generic standards - Emission standard<br>for industrial environments                 |

\* For detailed information on SuperTrak component certifications, visit  
<https://supertrakconveyance.com/certifications/>

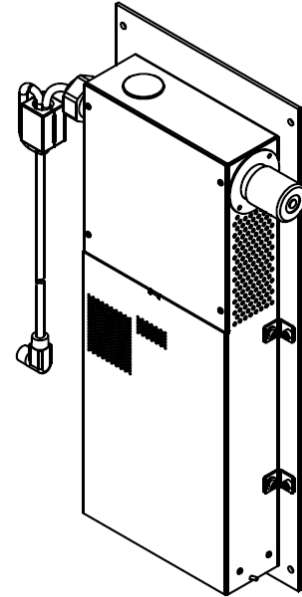
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## Power Supply Data Sheet

The power supply supplies power to straight and curved sections.

### Features

- Provides a modular power system; adjust the number of SuperTrak conveyance platform power supplies based on the size and requirements of the system.
- Includes:
  - A 48VDC power output cable
  - An AC power input plug
  - One (1) air filter
  - M8 three-pin connection for PLC monitoring
  - Mounting plate (as pictured at right)--can be ordered without mounting plate



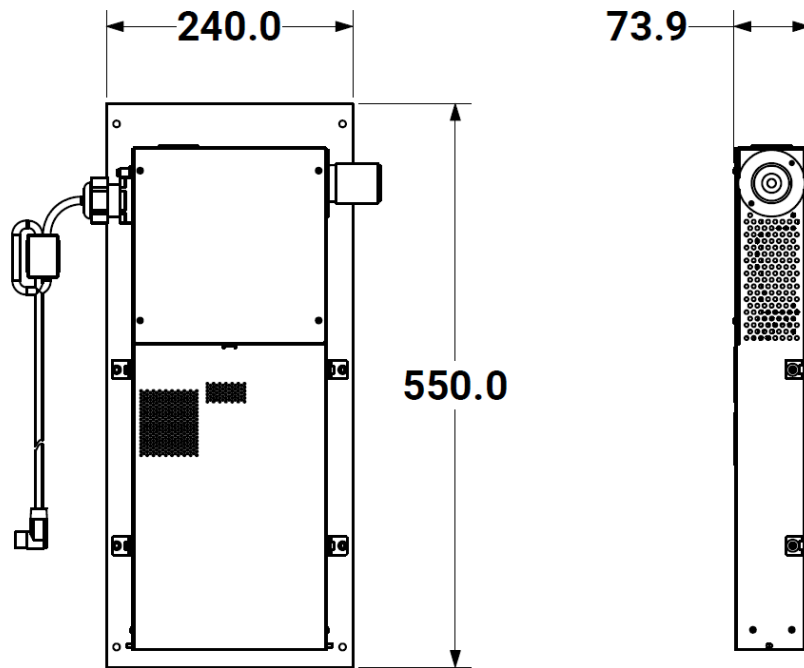
### Part Numbers

| Part                                               | DC Output Cable Length <sup>a</sup> | Part Number         |
|----------------------------------------------------|-------------------------------------|---------------------|
| Power supply with mounting plate and cable         | 2 m (standard)                      | 48V-1500W-2M-1PH-MT |
|                                                    | 5 m (optional)                      | 48V-1500W-5M-1PH-MT |
| Power supply with cable and without mounting plate | 2 m (standard)                      | 48V-1500W-2M-1PH    |
|                                                    | 5 m (optional)                      | 48V-1500W-5M-1PH    |

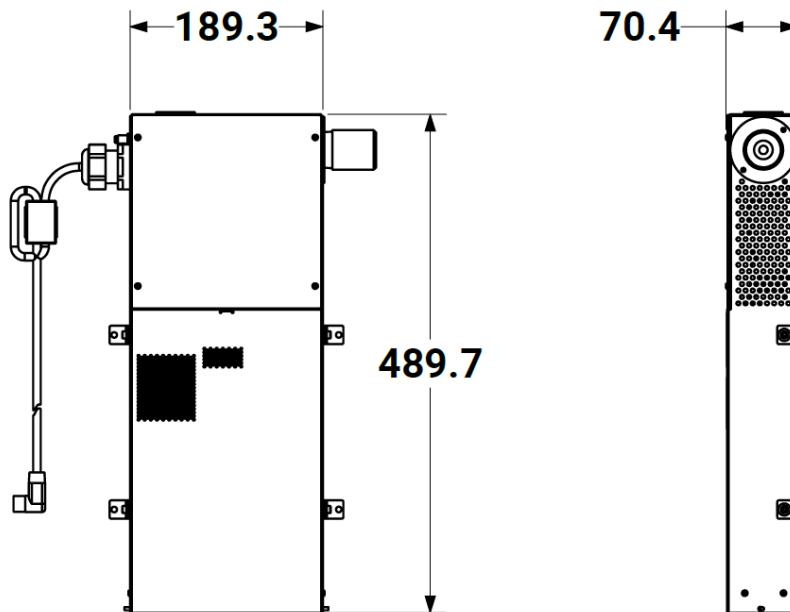
a.All power supplies on a track must have the same cable lengths. Do not use power supplies with varying cable lengths on the same system.

## Dimensions

*With mounting plate*



*Without mounting plate*



*Dimensions shown are for reference only. See SuperTrak Design Package for detailed drawings.*

## Technical Specifications

| Specification                 | Value                                               |
|-------------------------------|-----------------------------------------------------|
| Cable length                  | 2000 mm (78.74 in.) - standard                      |
|                               | 5000 mm (196.85 in.) - optional                     |
| Cable bend radius (inside)    | 30 mm (1.18 in.)                                    |
| Frequency                     | 50/60Hz                                             |
| Main voltage (input)          | 200-240VAC                                          |
| Efficiency (%)                | 91-93% (typical, dependent on voltage)              |
| Material                      | Aluminum, brass, nickel-plated, polyamide (PA), PUR |
| Max. number of power supplies | Application-dependent                               |
| Output wattage (continuous)   | 1500W                                               |
| Output voltage                | 48VDC                                               |
| Approximate weight            | 9 kg (19.8 lbs)                                     |
| SCCR                          | 5kA                                                 |

## Power Supply Status Input

### Overcurrent/Short-Circuit Protection

- Overcurrent protection is built in (105% of rated current).
- The power supply will automatically recover when the fault condition is removed.

### Overvoltage Protection

- Overvoltage protection is built in ( $V_o + 5.6 - 11.2$ ).
- If the overvoltage protection circuit is activated, shut down the input voltage, wait at least three minutes and turn on the AC input again to recover the output voltage.

### Thermal Protection

The built-in thermal protection circuit will be activated under the following conditions and will shut down the output when the fan stops or air flow is blocked from the fan.

If the thermal protection circuit is activated, shut off the input voltage and eliminate the overheating conditions. To recover the output voltage, allow the unit to fully cool down (~10min) before reapplying the input voltage.

## Power Supply Certifications

| Region                             | Regulatory Standard Application | Description                                                                                                                          |
|------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| North America<br>Safety - OSHA/SCC | UL 61010-1                      | Standard for Safety Requirements for Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements |
|                                    | UL508                           | Standard for Industrial Control Equipment                                                                                            |
|                                    | CAN/CSA-C22.2 No. 61010-1       | Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements             |
| North America<br>EMI-OSHA/SCC      | FCC part 15 subpart b           | Unintentional Radiators                                                                                                              |
|                                    | ICES-003                        | Information Technology Equipment (including Digital Apparatus)                                                                       |
| Europe<br>Low Voltage Directive    | EN 60204-1                      | Safety of machinery – Electrical equipment of machines – Part 1: General requirements                                                |
|                                    | EN 61010                        | Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements             |
| Europe<br>EMC Directive            | EN 61800-3                      | Adjustable speed electrical power drive systems - Part 3: EMC requirements and specific test methods for PDS and machine tools       |
|                                    | EN 61000-6-2                    | Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments                    |
|                                    | EN 61000-6-4                    | Electromagnetic compatibility (EMC) - Part 6-4: Generic standards - Emission standard for industrial environments                    |

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