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TITAN-SVX-ETH

Arcus Servo Motion

NPM Nippon Pulse

Your Partner in Motion Control

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TITAN Universal Servo Motor Controller

Easy

TITAN controller technology makes it possible to set up and configure any motion system in a few minutes using the Auto-Detection Wizards and the user-friendly and intuitive TITAN Software.

Intelligent

TITAN is the first servo controller to support the special EDGE analytics and predictive machine learning algorithm called 2ndSight.

Universal

TITAN is compatible with a wide range of motors including NPA's Linear Shaft Motor, Voice Coil Motors, Rotary and Linear Hybrid Stepper Motors, and Rotary and Linear Brushless Servo Motors.

Versatile

TITAN can communicate in all formats, including Ethernet, USB, and RS485.

Advanced

Equipped with many advanced servo control technologies including:

- Advanced Force control paths
- Friction Coefficient Monitoring
- Impact and wear tracking
- Anomaly Detection
- Edge to Cloud capable
- Dynamic Gain Control
- Multi-Thread Processor

Easy

TITAN Servo Controllers can easily be set up and configured with any type of motion system without requiring specialized knowledge or experience in the motion control field.

1. **User-friendly and Intuitive Software**
   TITAN Servo Controllers use the user-friendly and intuitive TITAN software, allowing easy access to all the available motion features of the TITAN-SVX-ETH.

2. **Easy Communication Setup**
   TITAN controllers come with various everyday communication options including USB, RS485, and Ethernet. For USB and RS485 communications, the software will automatically detect and begin communicating with the TITAN controller.

3. **Easy Motor Setup with Auto Detect**
   TITAN-SVX-ETH includes auto detection sequences that will assist in easily setting up the motor. Once minimal information on the motor is entered, the intuitive TITAN series software will fill in the rest.

   Simplified gain control also allows for easy tuning of the system without requiring any motion controls expertise.

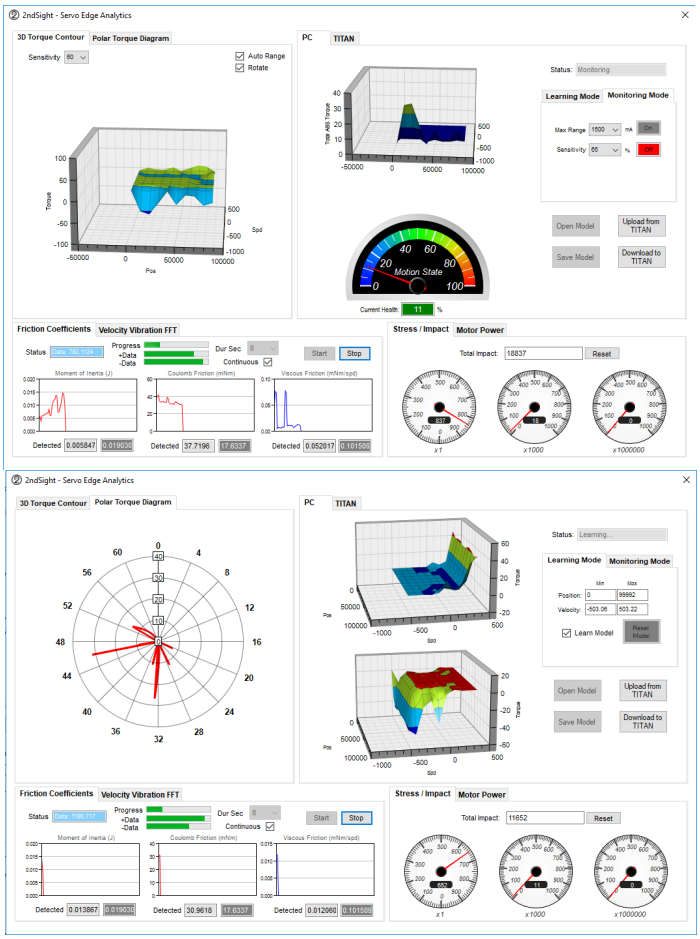
Intelligent

Predictive Machine Learning Algorithm: 2ndSight

TITAN Servo Controllers are compatible with 2ndSight, a true EDGE Analytics technology that enables predictive maintenance on the motion system. 2ndSight uses Multi-dimensional Parameter Modeling (MPM), Friction Coefficient Calculation (FCC), and Cumulative Impact Tracking (CIT) to provide real-time monitoring and analytics on the health state of the motion system.

2ndSight constantly monitors the motor and system performance, identifies motion trends, and prevents failures before they occur.

TITAN-SVX-ETH, in conjunction with 2ndSight analytics, offers predictive maintenance that can eliminate system failure and improve efficiency, making it the first Industry 4.0 and IoT ready servo controller.



Universal

TITAN Servo Controllers are compatible with most commonly used motors, including NPM's Linear Shaft Motor, Voice Coil Motors, Rotary and Linear Hybrid Stepper Motors, and Rotary and Linear Brushless Servo Motors.

TITAN can simplify a system by having ONE solution for a variety of motion requirements.

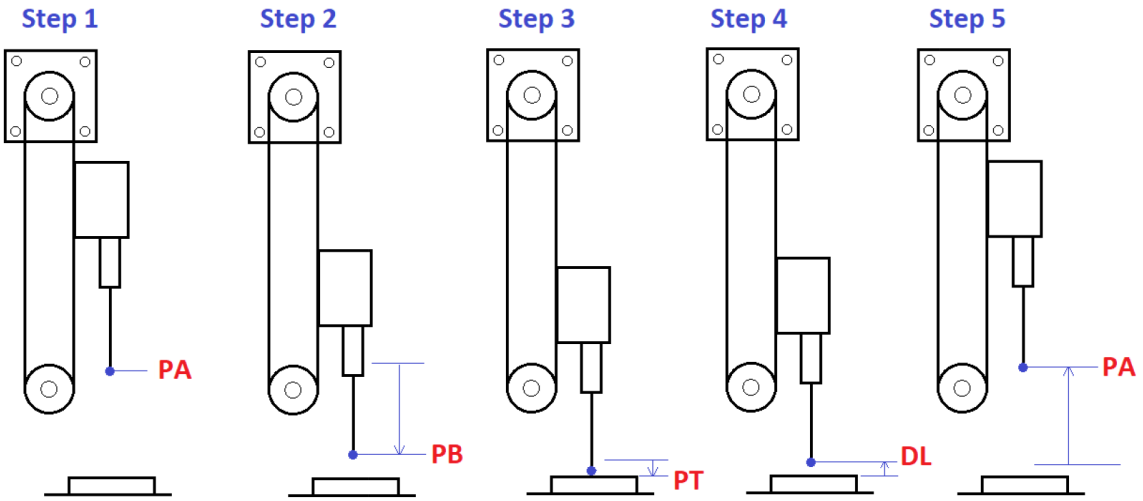
Versatile

TITAN Servo Controllers come with various communication options to meet the different control needs. Together with the ability to operate a wide range of motor types and multi-thread programming, it makes the TITAN servo controller extremely flexible.

Advanced

TITAN Servo Controllers are equipped with many advanced servo control technologies including force control, joystick control, dynamic gains, and standalone programming.

1. **Force Control**
   The TITAN controller can read the force on the motor and use the measurement for the force control feature. The intuitive TITAN series software will setup up the sequence and automate the Force Control motion routine.



2. **Joystick Control**
   TITAN-SVX-ETH will come with a built in joystick control. A designated analog input can be used to control both the speed and direction of the motor while maintaining closed loop servo feedback. User adjustable parameters can be used to fine tune the joystick control operation and satisfy the specific needs of an application.

3. **Dynamic Gains**
   The TITAN servo controller can automatically adjust the closed loop gains of the motor, allowing for different levels of control depending on speed. This allows for high responsiveness from the motor when it is most crucial.

4. **Standalone Programming**
   Flexible and easy to use programming can be stored on the TITAN controller and run independent of communication. Up to three standalone programs can be run simultaneously to control various aspects of the TITAN-SVX-ETH.

   Start the standalone programs on power up and no communication is needed to handle motion.

Arcus Servo Motion

Specifications

- A Universal Servo Motor Controller with 2ndSight Technology to meet the challenges for the emerging Smart Factory and Industry 4.0 market
- Compatible with all commonly used motor types: BLDC, Stepper, Linear, Voice Coil
- Supports Ethernet, USB, and RS485 communication and standalone multi-thread programming.
- Offers advanced servo control functions to meet many challenging motion requirements

Power Supply

- 24-48VDC
- 8A Max Current

Advanced Motion Features

- Auto Motor Parameter Detection
- Auto Tuning with Inertia and Friction Detection
- Joystick Control using Analog Input
- Force/Torque Control
- Dynamic Gain Control
- Simplified Gain Control
- Kalman Filter
- Notch Filter
- Trapezoidal, Parabolic, and S-Curve motion profiles
- High Resolution Motion Analysis
- Multi-Thread Standalone Programming

Closed Loop Servo Technology

- Universal Motor Support (BLDC, Stepper, Linear, Voice Coil)
- Supports Standalone Controller Mode or Pulse Mode
- Differential Encoder Input
- Digital Hall Sensor Input

Digital and Analog IO

- 8 Opto-isolated Digital Inputs
  - Controller Mode: +Limit, -Limit, Home, 5 General Inputs
  - Pulse Mode: Pulse, Dir, Enable, Clear, Reset, 3 General Inputs
- 3 Opto-isolated Digital Outputs
  - Controller Mode: 3 General Outputs
  - Pulse Mode: In-pos, Alarm, 1 General Output
- 1 Analog Input 0-5V range

Communication

- USB 2.0 using Virtual Serial COM Port
- RS485 with 115K Baud
- Ethernet 100M
- Motor and System Database File System Support
- Protocols Supported: Arcus ASCII, MODBUS RTU, MODBUS ASCII

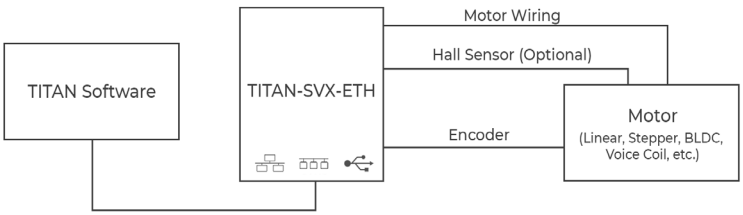
Connector

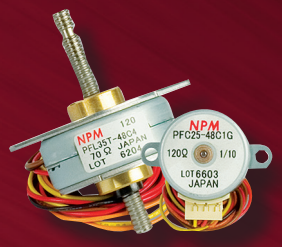
- RJ45 Ethernet connector
- USB Mini-B connector
- 3 pin RS485 connector
- 2 x 15 pin HD DSUB for motion DIO and encoder
- 4 pin Mini-fit Jr for motor
- 2 pin Mini-fit Jr for power

Electrical and Thermal Specifications

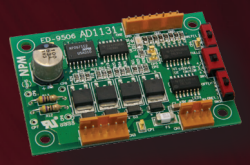
- Digital Input Forward Diode Max Current: 25 mA
- Digital Output Collector Max Voltage: - +24
- V Digital Output Sink Max Current: 45 mA
- Operating Temperature: -20 to 80 °C
- Storage Temperature: -55 to 150 °C

Typical Wiring Setup





The Nippon Pulse Advantage



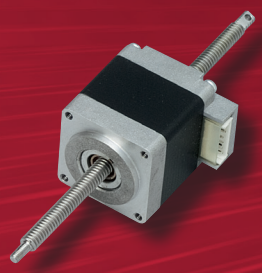
For more than 60 years, Nippon Pulse has built state-of-of-the-art products based on a solid foundation of advancing technology and thorough product research.

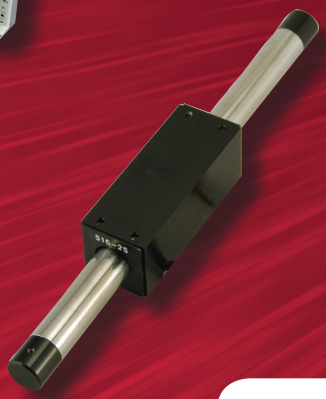
Nippon Pulse faithfully provides these high-quality products to a wide range of industries in North and South America and Europe. We have established ourselves as a leader in stepper motor, driver and controller technology while introducing innovative products, such as the Linear Shaft Motor. At Nippon Pulse, we believe that by bringing products to market that meet the customers' requirements and exceed expectations, we contribute to the progression of technology and its positive impact on our society.

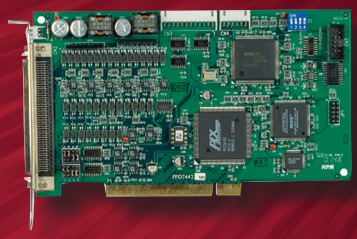
We have representatives throughout North and South America and Europe to assist customers directly. Limited quantities of stock on standard motors and electronics are available to allow faster response to customer needs. In addition, Nippon Pulse has a model shop in its North American headquarters for quick turnaround on custom prototypes and special orders. Our mission is to faithfully create the new products sought by our customers and to contribute to the development of society from a global viewpoint.

When you choose a Nippon Pulse motor, driver, controller, network or stage, you're doing more than just buying a quality product: you're benefitting from what we call the Nippon Pulse Advantage. This includes superior prototyping, complete system engineering, proper compliance and certification according to international guidelines, exceptional tailoring to your needs, and unmatched support.

A wholly owned subsidiary of Nippon Pulse Motor Co., Ltd., Nippon Pulse America is headquartered in Radford, Va.







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