



SOLUTIONS FOR THE TEXTILE INDUSTRY

DRIVES AND CONTROLLERS FOR TEXTILE MACHINERY



Solutions for the Textile Industry

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For almost 100 years YASKAWA has been supplying mechatronic solutions and is one of the leading companies for drive and automation products and systems worldwide. YASKAWA develops

and manufactures Inverter and Servo Drives, Motion Controllers and industrial robots for a wide range of applications and has a high reputation for outstanding quality and durability.

Reliability & Competence

All over the world YASKAWA drive solutions power textile machinery and keep it running 24 hours per day, 365 days per year.

Textile machinery disruptions quickly result in enormous production outage losses. Because of this down-times need to be eliminated by means of careful engineering and a selection of reliable drive components and systems. YASKAWA is the partner who can provide competent engineering teams and high quality products specific to the textile industry.

YASKAWA offers dedicated Drive Systems for the Textile Industry.

A complete power range from 0.1 kW to 185 kW is available with standard and specific functionality to cover the application requirements of the textile machine industry. The T1000 Inverter Series and the Sigma-5 Servo Series from YASKAWA have been developed with a focus on reliable operation, easy handling and overall cost saving aspects. Controllers complete our portfolio.

Expertise & Experience

YASKAWA provides great experience in the textile industry derived from long term partnerships. Application-specific solutions ensure high efficiency and profitability for its customers. From bale opening to the weaving machine, from extruders to winders – Yaskawa knows the specific application requirements.

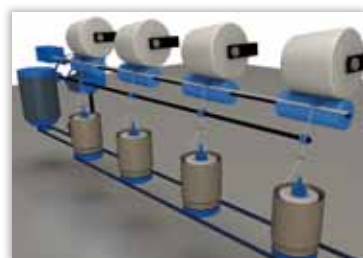




Processes

Requirements

YASKAWA Solutions



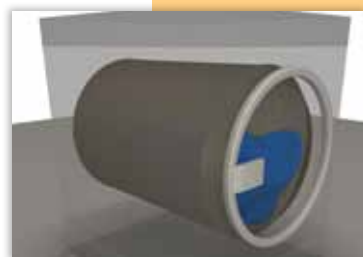
Fiber Preparation

Resistance to
Fibers and Dust

Combing

Energy Saving Functions

Draw Frame



Winding

Deceleration of
high inertia Loads

Carding

Spinning

Control Accuracy



Weaving

Synchronisation

Knitting

Texturing

Speed Accuracy



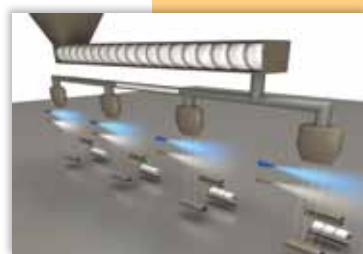
Sliver Production

High Torque
at Zero Speed

Refining

Printing

Chemical Aggressive
Environments



Smoothing

Washing, Dying,
Bleaching

Resistance to
Power Supply Outage



Extruding

Multi Axis
Synchronisation

Weft Knitting

Finishing

High Torque

Cold Plate Drives
to adapt to Heat Sinks
suitable for Textiles

Speed Synchronisation
as Standard

Power Loss Ride
Through Function

Textile specific
Drive Design

24h non-stop
Operation

PCB Coating

Product Features

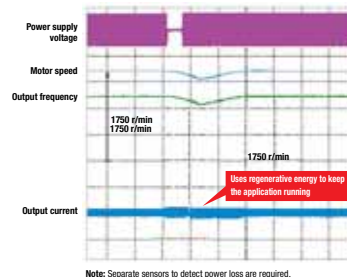
Coated PCBs

T1000 series inverter drives are equipped with specially coated PCBs which enhances their protection and improves the service life of the drive in moist, aggressive and dusty working environments.



Momentary Power Loss Ride-through Function

Keeps the motor running without allowing it to coast. Should a power outage occur, T1000 prevents production loss by controlled deceleration down to stop or restart, including for synchronised drives.

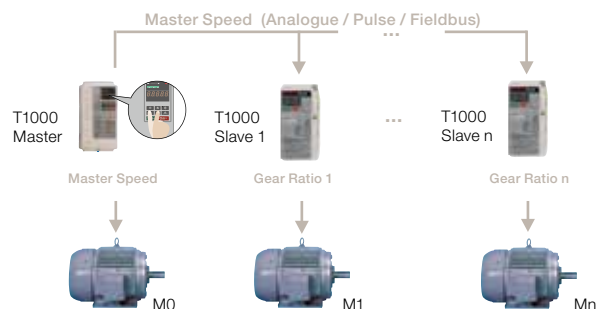


Cold Plate

Cold plate feature enables the drive applications with externally cooling systems such as water or convection cooling in standard or custom systems.

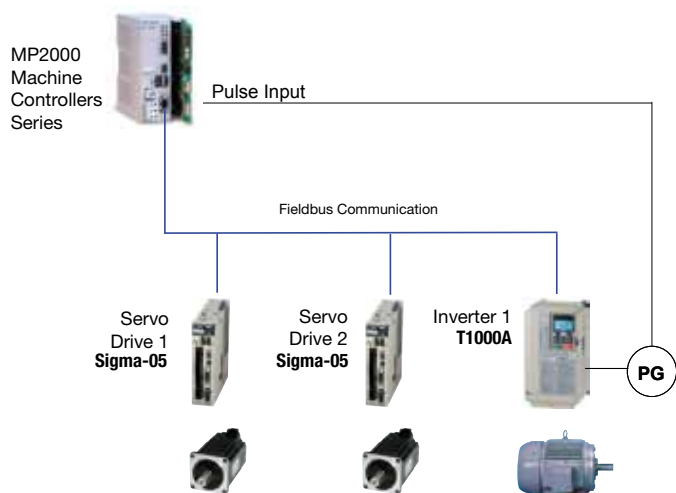


Synchronised Operation of multiple Motors



- ▶ Electronic line shaft with high speed ratio accuracy
- ▶ Flexible gear ratio during operation
- ▶ Long-term cost reduction by elimination of gear boxes
- ▶ 1:n synchronisation via analogue/pulse I/O or fieldbus connection

Mixed Multiple-Axis Systems



Twister Machine System configuration

Designed for 10 Years of Operation

Designed for 10 years of maintenance-free operation. The cooling fan, capacitors, relays, and IGBTs have been carefully selected and designed for a service life up to ten years. This assumes that the drive runs continuously for 24 hours a day at 80% load with an ambient temperature of 40°C (without derating).



YASKAWA Inverter for the Textile Industry

High Performance Inverter Drive for Textile Applications

T1000A

The T1000A is a high performance vector control AC Drive specially developed for textile applications. Special hardware and software features make this inverter drive especially suitable for the needs of the textile industry.

Features

- ▶ Heat sink and cold plate versions for water cooler mounting available (finless = fanless)
- ▶ PCB coating suitable for textile production – for highest reliability in typical textile applications
- ▶ Power loss ride-through function – safe operation status at all times, including for synchronised drives with shared DC link
- ▶ Pulse Train Output and Pulse Train speed reference - easy and effective synchronised line speed
- ▶ Traverse function - for optimised yarn winding
- ▶ High precision open- and closed loop control of induction and permanent magnet motors
- ▶ Optional cards available for all major serial networks: PROFIBUS-DP, DeviceNet, CC-Link, CANopen, MECHATROLINK, etc.

Ratings

- ▶ 3 ~ 200 V 240 V +10%/-15%, 0.55 kW – 110 kW
- ▶ 3 ~ 380 V 480 V +10%/-15%, 0.55 kW – 185 kW



Compact Inverter Drive for Textile Applications

T1000V

The T1000V is a compact size inverter for textile application. It includes many useful features and functions which correspond to the needs of textile machinery.

Features

- ▶ Heat sink and cold plate versions for water cooler mounting available
- ▶ PCB coating suitable for textile production – for highest reliability in typical textile applications
- ▶ Power loss ride-through function – safe operation status at all times, including for synchronized drives with shared DC link
- ▶ Traverse function – for optimized yarn winding
- ▶ Sensorless control of induction and PM motors

Ratings

- ▶ 1 ~ 200 V 240 V +10%/-15%, 0.1 kW – 3.0 kW
- ▶ 3 ~ 200 V 240 V +10%/-15%, 0.1 kW – 18.5 kW
- ▶ 3 ~ 380 V 480 V +10%/- 15%, 0.2 kW – 18.5 kW



YASKAWA Servo-Drives and Controllers

Sigma-5

AC Servo Drive Series

With the highest stability and best response (1.6 kHz) in its class, YASKAWA's new AC servo drives enable high-frequency and high-precision positioning. Combines servo amplifiers with high-speed servomotors of 6000 rpm or with linear motors for maximum machine performance.

Features

- ▶ New advanced auto-tuning for maximum machine performance
- ▶ New one-parameter tuning for fine adjustments
- ▶ Quickened response for reduced settling time for positioning
- ▶ High-resolution encoder for high-precision positioning and microfabrication (Resolution: 1,048,576 pulses/revolution)
- ▶ Enhanced vibration suppression
- ▶ Network Options: MECHATROLINK, CANopen, EtherCAT, POWERLINK, PROFINET
- ▶ Motion Control Options: Indexer, MP2600iec

Ratings

- ▶ 200 V class, 50 W – 1.5 kW
- ▶ 400 V class, 0.5 kW – 15 kW

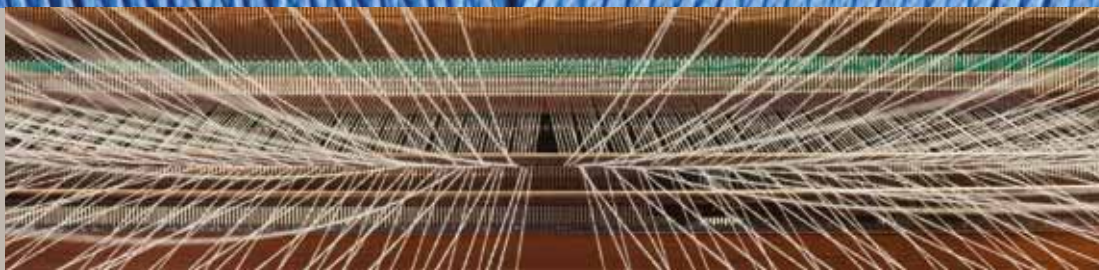
MP2000 Series

Flexible Machine Controllers

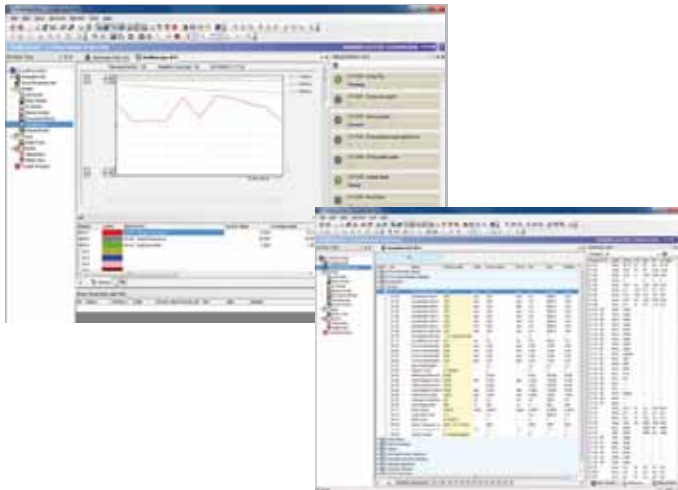
The MP2000 Series Machine Controllers are based on three essentials, from which ideal motion control can be achieved on a wide variety of machines: Maximized speed with accurate motion control, wide application range with perfect control and increased efficiency with easier programming and maintenance.

Features

- ▶ Up to 256 controlled axes
- ▶ Standard MP2000 Series and high performance MP2000iec Series with IEC61131 programming standards and PLCopen function blocks.
- ▶ Board-type, drive-based and All-in-one Machine Controller
- ▶ Position control, synchronized phase control, speed control, torque control, Electronic CAM/Shaft
- ▶ MECHATROLINK, EtherNet/IP, serial communications (RS-232C, RS-422/485), DeviceNet, PROFIBUS and ModbusTCP/OPC



Engineering Tool DriveWizard Plus



Manage the unique settings for all your drives right on your PC. An indispensable tool for drive setup and maintenance. Edit parameters, access all monitors, create customized operation sequences, and observe drive performance with the oscilloscope function.

- Convenient PC-based drive-setup, monitoring and diagnostic functions
- Built-in scope function
- Automatic parameter conversion from older series drives
- Online and offline parameter editing

Drive Options

Inverter Drives

Braking/Filters

- AC Chokes, reducing harmonics
- EMC-Filters
- Output noise filters
- Braking choppers and resistors

I/O, Communication Options

- Analogue and digital Input/Output Option Cards
- Speed feedback options for incremental encoders
- Field bus options: DeviceNet, CC-Link, CANopen, MECHATROLINK, PROFIBUS-DP coming soon: EtherCAT, POWERLINK, Ethernet IP

Human Machine Interface

- 8 Language LCD clear text display
- Parameter copy unit

Sigma-5 Servo Amplifiers

- Field bus options: EtherCAT, CANopen, POWERLINK
- Indexer option module
- MP2600iec motion controller with IEC61131-3 programming





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